Appendix A: Description of the Survey

A.1 Sample Design

The 2001 National Household Survey on Drug Abuse (NHSDA) sample design was part of a coordinated 5-year sample design that will provide estimates for all 50 States plus the District of Columbia for the years 1999 through 2003. The coordinated design facilitates 50 percent overlap in first-stage units (area segments) between each 2 successive years.

For the 5-year 50-State design, 8 States were designated as large sample States (California, Florida, Illinois, Michigan, New York, Ohio, Pennsylvania, and Texas) with samples large enough to support direct State estimates. Sample sizes in these States ranged from 3,502 to 4,023. For the remaining 42 States and the District of Columbia, smaller, but adequate, samples were selected to support State estimates using small area estimation (SAE) techniques. Sample sizes in these States ranged from 852 to 1,069 in 2001.

States were first stratified into a total of 900 field interviewer (FI) regions (48 regions in each large sample State and 12 regions in each small sample State). These regions were contiguous geographic areas designed to yield the same number of interviews on average. Within FI regions, adjacent Census blocks were combined to form the first-stage sampling units, called area segments. A total of 96 segments per FI region were selected with probability proportional to population size in order to support the 5-year sample and any supplemental studies that the Substance Abuse and Mental Health Services Administration (SAMHSA) may choose to field. Eight sample segments per FI region were fielded during the 2001 survey year.

These sampled segments were allocated equally into four separate samples, one for each 3-month period during the year, so that the survey is essentially continuous in the field. In each of these area segments, a listing of all addresses was made, from which a sample of 203,544 addresses was selected. This sample includes a special supplement added in the New York City area in quarter 4 to provide greater precision for any analyses of the effect of the September 11th events. Of the selected addresses, 171,519 were determined to be eligible sample units. In these sample units (which can be either households or units within group quarters), sample persons were randomly selected using an automated screening procedure programmed in a handheld computer carried by the interviewers. The number of sample units completing the screening was 157,471. Youths (aged 12 to 17 years) and young adults (aged 18 to 25 years) were oversampled at this stage. Because of the large sample size associated with this sample, there was no need to oversample racial/ethnic groups, as was done on NHSDAs prior to 1999. A total of 89,745 persons were selected nationwide. Consistent with previous NHSDAs, the final respondent sample of 68,929 persons was representative of the U.S. general population (since 1991, the civilian, noninstitutionalized population) aged 12 or older. In addition, State samples were representative of their respective State populations. More detailed information on the disposition of the national screening and interview sample can be found in Appendix B. Also, additional tables showing sample sizes and estimated population counts for various demographic and geographic subgroups are presented in Appendix G. Definitions of key terms are provided in Appendix D.

The survey covers residents of households (living in houses/townhouses, apartments, condominiums, etc.), noninstitutional group quarters (e.g., shelters, rooming/boarding houses, college dormitories, migratory workers' camps, halfway houses), and civilians living on military bases. Although the survey covers these types of units (they are given a nonzero probability of selection), sample sizes of most specific groups are too small to provide separate estimates. Persons excluded from the survey include homeless people who do not use shelters, active military personnel, and residents of institutional group quarters, such as correctional facilities, nursing homes, mental institutions, and long-term hospitals.

To evaluate the effectiveness of respondent incentives in improving response rates in the NHSDA, an experiment was conducted during the first two quarters of the 2001 survey. A randomized, split-sample, experimental design was embedded within 251 of the main study FI regions to compare the impact of $20 and $40 incentive treatments with a $0 control group on measures of respondent cooperation, data quality, survey costs, and population substance use estimates. To control for interviewer effects, the same FIs were required to work all of the control and treatment cases in an FI region whenever possible. A total of 9,600 respondents participated in the experiment, including 4,233 who received $0, 2,489 who received $20, and 2,878 who received $40. All 9,600 respondents were included in the computation of 2001 NHSDA estimates. For a discussion of the potential impact of the incentive experiment, see Section C.3 in Appendix C.

A.2 Data Collection Methodology

The data collection method used in the NHSDA involves in-person interviews with sample persons, incorporating procedures that would be likely to increase respondents' cooperation and willingness to report honestly about their illicit drug use behavior. Confidentiality is stressed in all written and oral communications with potential respondents, respondents' names are not collected with the data, and computer-assisted interviewing (CAI) methods, including audio computer-assisted self-interviewing (ACASI), are used to provide a private and confidential setting to complete the interview.

Introductory letters are sent to sampled addresses, followed by an interviewer visit. A 5-minute screening procedure conducted using a handheld computer involves listing all household members along with their basic demographic data. The computer uses the demographic data in a preprogrammed selection algorithm to select 0-2 sample person(s), depending on the composition of the household. This selection process is designed to provide the necessary sample sizes for the specified population age groupings.

Interviewers attempt to immediately conduct the NHSDA interview with each selected person in the household. The interviewer requests the selected respondent to identify a private area in the home away from other household members to conduct the interview. The interview averages about an hour and includes a combination of CAPI (computer-assisted personal interviewing) and ACASI. The interview begins in CAPI mode with the FI reading the questions from the computer screen and entering the respondent's replies into the computer. The interview then transitions to the ACASI mode for the sensitive questions. In this mode, the respondent can read the questions silently on the computer screen and/or listen to the questions read through

headphones and enter his or her responses directly into the computer. At the conclusion of the ACASI section, the interview returns to the CAPI mode with the interviewer completing the questionnaire.

No personal identifying information is captured in the CAI record for the respondent. At the end of the day when an interviewer has completed one or more interviews, he or she transmits the data to RTI in Research Triangle Park, North Carolina, via home telephone lines.

A.3 Data Processing

Interviewers initiate nightly data transmissions of interview data and call records on days when they work. Computers at RTI direct the information to a raw data file that consists of one record for each completed interview. Even though much editing and consistency checking is done by the CAI program during the interview, additional more complex edits and consistency checks are completed at RTI. Cases are retained only if respondents provided data on lifetime use of cigarettes and at least nine other substances. An important aspect of subsequent editing routines involves assignment of codes when respondents legitimately skipped out of questions that definitely did not apply to them (e.g., if respondents never used a drug of interest). For key drug use measures, the editing procedures identify inconsistencies between related variables. Inconsistencies in variables pertaining to the most recent period that respondents used a drug are edited by assigning an "indefinite" period of use (e.g., use at some point in the lifetime, which could mean use in the past 30 days or past 12 months). Inconsistencies in other key drug use variables are edited by assigning missing data codes. These inconsistencies are then resolved through statistical imputation procedures, as discussed below.

A.3.1 Statistical Imputation

For some key variables that still have missing or ambiguous values after editing, statistical imputation is used to replace ambiguous or missing data with appropriate response codes. For example, the response is ambiguous if the editing procedures assigned a respondent's most recent use of a drug to "use at some point in the lifetime," with no definite period within the lifetime. In this case, the imputation procedures assigned a definite value for when the respondent last used the drug (e.g., in the past 30 days, more than 30 days ago but within the past 12 months, more than 12 months ago). Similarly, if the response is completely missing, the imputation procedures replaced missing values with nonmissing ones.

Missing or ambiguous values are imputed using a methodology developed specifically for the NHSDA in 1999 and called predictive mean neighborhoods (PMN). PMN is a combination of a model-assisted imputation methodology and a random nearest neighbor hot-deck procedure. Whenever feasible, the imputation of variables using PMN is multivariate, in which imputation is accomplished on several response variables at once. Variables requiring imputation were the core demographic variables, core drug use variables (recency of use, frequency of use, and age at first use), income, health insurance, and a variety of roster-derived variables.

In the modeling stage of PMN, the model chosen depends on the nature of the response variable Y. In the 2001 NHSDA, the models included binomial logistic regression, multinomial

logistic regression, Poisson regression, and ordinary linear regression, where the models incorporate the design weights.

In general, hot-deck imputation replaces a missing or ambiguous value taken from a "similar" respondent who has complete data. For random nearest neighbor hot-deck imputation, the missing or ambiguous value is replaced by a responding value from a donor randomly selected from a set of potential donors. Potential donors are those defined to be "close" to the unit with the missing or ambiguous value, according to a predefined function, called a distance metric. In the hot-deck stage of PMN, the set of candidate donors (the "neighborhood") consists of respondents with complete data who have a predicted mean close to that of the item nonrespondent. In particular, the neighborhood consists of either the set of the closest 30 respondents, or the set of respondents with a predicted mean (or means) within 5 percent of the predicted mean(s) of the item nonrespondent, whichever set is smaller. If no respondents are available who have a predicted mean (or means) within 5 percent of the item nonrespondent, the respondent with the predicted mean(s) closest to that of the item nonrespondent is selected as the donor.

In the univariate case, the neighborhood of potential donors is determined by calculating the relative distance between the predicted mean for an item nonrespondent, and the predicted mean for each potential donor, then choosing those means defined by the distance metric. The pool of donors is further restricted to satisfy logical constraints whenever necessary (e.g., age at first crack use must not be younger than age at first cocaine use).

Whenever possible, missing or ambiguous values for more than one response variable are considered at a time. In this (multivariate) case, the distance metric is a Mahalanobis distance rather than a relative Euclidean distance. Whether the imputation is univariate or multivariate, only missing or ambiguous values are replaced, and donors are restricted to be logically consistent with the response variables that are not missing. Furthermore, donors are restricted to satisfy "likeness constraints" whenever possible. That is, donors are required to have the same values for variables highly correlated with the response. If no donors are available that meet these conditions, these likeness constraints can be loosened. For example, donors for the age at first use variable are required to be of the same age as recipients, if at all possible.

Although statistical imputation could not proceed separately within each State due to insufficient pools of donors, information about each respondent's State of residence was incorporated in the modeling and hot-deck steps. For most drugs, respondents were separated into three "State usage" categories as follows: respondents from States with high usage of a given drug were placed in one category, respondents from States with medium usage into another, and the remainder into a third category. This categorical "State rank" variable was used as one set of covariates in the imputation models. In addition, eligible donors for each item nonrespondent were restricted to be of the same State usage category (i.e., the same "State rank") as the nonrespondent.

A.3.2 Development of Analysis Weights

The general approach to developing and calibrating analysis weights involved developing design-based weights, d_k, as the inverse of the selection probabilities of the households and persons. Adjustment factors, $a_k(\lambda)$, were then applied to the design-based weights to adjust for nonresponse, to poststratify to known population control totals, and to control for extreme weights when necessary. In view of the importance of State-level estimates with the new 50-State design, it was necessary to control for a much larger number of known population totals. Several other modifications to the general weight adjustment strategy that had been used in past NHSDAs were also implemented for the first time beginning with the 1999 CAI sample.

Weight adjustments were based on a generalization of Deville and Särndal's (1992) logit model. This generalized exponential model (GEM) (Folsom & Singh, 2000) incorporates unit-specific bounds (ℓ_k, u_k), $k \in s$, for the adjustment factor $a_k(\lambda)$ as follows:

$$a_k(\lambda) = \frac{\ell_k(u_k - c_k) + u_k(c_k - \ell_k)\exp(A_k x_k'\lambda)}{(u_k - c_k) + (c_k - \ell_k)\exp(A_k x_k'\lambda)},$$

where c_k are prespecified centering constants, such that $\ell_k < c_k < u_k$ and $A_k = (u_k - \ell_k) / (u_k - c_k)(c_k - \ell_k)$. The variables ℓ_k, c_k, and u_k are user-specified bounds, and λ is the column vector of p model parameters corresponding to the p covariates x. The λ-parameters are estimated by solving

$$\sum_s x_k d_k a_k(\lambda) - \tilde{T}_x = 0,$$

where $\tilde{T}_x$ denotes control totals that could be either nonrandom, as is generally the case with poststratification, or random, as is generally the case for nonresponse adjustment.

The final weights $w_k = d_k a_k(\lambda)$ minimize the distance function $\Delta(w,d)$ defined as

$$\Delta(w,d) = \sum_{k \in s} \frac{d_k}{A_k}\left\{(a_k - \ell_k)\log\frac{a_k - \ell_k}{c_k - \ell_k} + (u_k - a_k)\log\frac{u_k - a_k}{u_k - c_k}\right\}.$$

This general approach was used at several stages of the weight adjustment process including (1) adjustment of household weights for nonresponse at the screener level, (2) poststratification of household weights to meet population controls for various demographic groups by State, (3) adjustment of household weights for extremes, (4) poststratification of selected person weights, (5) adjustment of person weights for nonresponse at the questionnaire level, (6) poststratification of person weights, and (7) adjustment of person weights for extremes.

Every effort was made to include as many relevant State-specific covariates (typically defined by demographic domains within States) as possible in the multivariate models used to calibrate the weights (nonresponse adjustment and poststratification steps). Because further subdivision of State samples by demographic covariates often produced small cell sample sizes,

it was not possible to retain all State-specific covariates (even after meaningful collapsing of covariate categories) and still estimate the necessary model parameters with reasonable precision. Therefore, a hierarchical structure was used in grouping States with covariates defined at the national level, at the Census division level within the Nation, at the State-group within Census division, and, whenever possible, at the State level. In every case, the controls for total population within State and the five age groups within State were maintained. Census control totals by age, race, gender, and Hispanicity were required for the civilian, noninstitutionalized population of each State. Unlike 1999 and 2000 NHSDAs, population estimates for the year 2001 (based on the 1990 Census after taking account of known demographic changes) were not published because of the natural requirement to use 2000 Census data for this purpose. However, due to extensive processing needed for the 2000 Census data, the required controls were not available in time for the 2001 NHSDA data processing. As an alternative, the Population Estimates Branch of the U.S. Bureau of the Census produced, in response to a special request, the necessary population estimates based on the 1990 Census. Use of the 1990 Census-based controls for 2001 population estimates certainly helped maintain comparability with previous years' controls. However, for 2001 the demographic estimation method was used unlike previous years wherein the 1990 census 5 percent public use micro data file (U.S. Bureau of the Census, 1992) was used to get the initial breakdown of the published State-level Census projections of the total residential population (which includes military and institutionalized) for demographic domains into two groups followed by the raking ratio method to meet both the State-level residential population counts as well as the national-level civilian and noncivilian counts for each domain.

Several other enhancements to the weighting procedures were also implemented starting in 1999. The control of extreme weights through winsorization was incorporated into the calibration processes for both nonresponse and poststratification adjustment. Winsorization was used to set bounds for extreme values at prespecified levels, and the GEM model was used to adjust the weights within bounds for both extreme and nonextreme weights such that the desired calibration controls were met. A step was added to poststratify the household-level weights to obtain Census-consistent estimates based on the household rosters from all screened households; these household roster-based estimates then provided the control totals needed to calibrate the respondent pair weights for subsequent planned analyses. Also, the adjusted screened household roster-based estimates provided the control totals for the additional step of poststratifying the selected persons sample. This additional step takes advantage of the inherent two phase nature of the NHSDA design. The final step in poststratification related the respondent person sample to external census data (defined within State whenever possible as discussed above).

Appendix B: Statistical Methods and Limitations of the Data

B.1 Target Population

An important limitation of the National Household Survey on Drug Abuse (NHSDA) estimates of drug use prevalence is that they are only designed to describe the target population of the survey—the civilian, noninstitutionalized population aged 12 or older. Although this population includes almost 98 percent of the total U.S. population aged 12 or older, it excludes some important and unique subpopulations who may have very different drug-using patterns. For example, the survey excludes active military personnel, who have been shown to have significantly lower rates of illicit drug use. Persons living in institutional group quarters, such as prisons and residential drug treatment centers, are not included in the NHSDA and have been shown in other surveys to have higher rates of illicit drug use. Also excluded are homeless persons not living in a shelter on the survey date, another population shown to have higher than average rates of illicit drug use. Appendix E describes other surveys that provide data for these populations.

B.2 Sampling Error and Statistical Significance

The national estimates, along with the associated variance components, were computed using a multiprocedure package, SUrvey DAta ANalysis (SUDAAN) Software for Statistical Analysis of Correlated Data, which was designed for the statistical analysis of sample survey data from stratified, multistage cluster samples (RTI, 2001). The final, nonresponse-adjusted, and poststratified analysis weights were used to compute unbiased design-based drug use estimates.

The sampling error (i.e., the standard error [SE]) of an estimate is the error caused by the selection of a sample instead of conducting a census of the population. Sampling error is reduced by selecting a large sample and by using efficient sample design and estimation strategies, such as stratification, optimal allocation, and ratio estimation.

With the use of probability sampling methods in the NHSDA, it is possible to develop estimates of sampling error from the survey data. These estimates have been calculated in SUDAAN for all estimates presented in this report using a Taylor series linearization approach that takes into account the effects of the complex NHSDA design features. The sampling errors are used to identify unreliable estimates and to test for the statistical significance of differences between estimates.

B.2.1 Variance Estimation for Totals

Estimates of proportions, $\hat{p}_d$, such as drug use prevalence rates, take the form of nonlinear statistics where the variances cannot be expressed in closed form. Variance estimation for nonlinear statistics in SUDAAN is performed using a first-order Taylor series approximation of the deviations of estimates from their expected values.

Corresponding to proportion estimates, $\hat{p}_d$, the number of drug users, $\hat{Y}_d$, can be estimated as

$$\hat{Y}_d = \hat{N}_d \hat{p}_d,$$

where $\hat{N}_d$ is the estimated population total for domain *d*, and $\hat{p}_d$ is the estimated proportion for domain *d*. The SE for the total estimate is obtained by multiplying the SE of the proportion by $\hat{N}_d$, that is,

$$SE(\hat{Y}_d) = \hat{N}_d \, SE(\hat{p}_d).$$

This approach is theoretically correct when the domain size estimates, $\hat{N}_d$, are among those forced to Census Bureau population projections through the weight calibration process. In these cases, $\hat{N}_d$ is clearly not subject to sampling error.

For domain totals, $\hat{Y}_d$, where $\hat{N}_d$ is not fixed, this formulation may still provide a good approximation if it can be reasonably assumed that the sampling variation in $\hat{N}_d$ is negligible relative to the sampling variation in $\hat{p}_d$. In most analyses conducted for prior years, this has been a reasonable assumption.

For a subset of the tables produced from the 2001 data, it was clear that the above approach yielded an underestimate of the variance of a total because $\hat{N}_d$ was subject to considerable variation. In these cases, a different method was used to estimate variances. SUDAAN provides an option to directly estimate the variance of the linear statistic that estimates a population total. Using this option did not affect the SE estimates for the corresponding proportions presented in the same sets of tables.

B.2.2 Suppression Criteria for Unreliable Estimates

As has been done in past NHSDA reports, direct survey estimates considered to be unreliable due to unacceptably large sampling errors are not shown in this report and are noted by asterisks (*) in the tables containing such estimates found in the appendices. The criterion used for suppressing all direct survey estimates was based on the relative standard error (RSE), which is defined as the ratio of the standard error (SE) over the estimate.

Proportion estimates ($\hat{p}$) within the range [$0 < \hat{p} < 1$], rates, and corresponding estimated number of users were suppressed if

$$\text{RSE}[(-\ln(\hat{p})] > 0.175 \text{ when } \hat{p} \leq 0.5$$

or

$$\text{RSE}[(-\ln(1 - \hat{p})] > 0.175 \text{ when } \hat{p} > 0.5.$$

Using a first-order Taylor series approximation to estimate RSE[(-ln($\hat{p}$)] and RSE[(-ln(1 - $\hat{p}$)], the following was obtained and used for computational purposes:

$$\frac{SE(\hat{p})/\hat{p}}{-\ln(\hat{p})} > 0.175 \text{ when } \hat{p} \leq 0.5$$

or

$$\frac{SE(\hat{p})/(1-\hat{p})}{-\ln(1-\hat{p})} > 0.175 \text{ when } \hat{p} > 0.5.$$

The separate formulas for $\hat{p} \leq 0.5$ and $\hat{p} > 0.5$ produce a symmetric suppression rule (i.e., if $\hat{p}$ is suppressed, then so will 1 - $\hat{p}$). This ad hoc rule requires an effective sample size in excess of 50. When $0.05 < \hat{p} < 0.95$, the symmetric property of the rule produces a local maximum effective sample size of 68 at $\hat{p} = 0.5$. Thus, estimates with these values of $\hat{p}$ along with effective sample sizes falling below 68 are suppressed. A local minimum effective sample size of 50 occurs at $\hat{p} = 0.2$ and again at $\hat{p} = 0.8$ within this same interval, so estimates are suppressed for values of $\hat{p}$ with effective sample sizes below 50.

Prior to the 2000 NHSDA, these varying sample size restrictions sometimes produced unusual occurrences of suppression for a particular combination of prevalence rates. For example, in some cases, lifetime prevalence rates near $\hat{p} = 0.5$ were suppressed (effective sample size was < 68 but > 50), while not suppressing the corresponding past year or past month estimates near $\hat{p} = 0.2$ (effective sample sizes were > 50). To reduce the occurrence of this type of inconsistency, a minimum effective sample size of 68 was added to the NHSDA suppression criteria starting in 2000. As $\hat{p}$ approached 0.00 or 1.00 outside the interval (0.05, 0.95), the suppression criteria still required increasingly larger effective sample sizes. For example, if $\hat{p}$ = 0.01 and 0.001, the effective sample size must exceed 152 and 684, respectively.

Also new to the NHSDA starting in 2000 were minimum nominal sample size suppression criteria (n = 100) that protect against unreliable estimates caused by small design effects and small nominal sample sizes. Prevalence estimates were also suppressed if they were close to 0 or 100 percent (i.e., if $\hat{p} < .00005$ or if $\hat{p} \geq .99995$).

Estimates of other totals (e.g., number of initiates) along with means and rates (both not bounded between 0 and 1) were suppressed if RSE($\hat{p}$) > 0.5. Additionally, estimates of the mean age at first use were suppressed if the sample size was smaller than 10 respondents; moreover, the estimated incidence rate and number of initiates were suppressed if they rounded to 0.

The suppression criteria for various NHSDA estimates are summarized in Table B.1 at the end of this appendix.

B.2.3 Statistical Significance of Differences

This section describes the methods used to compare prevalence estimates in this report. Customarily, the observed difference between estimates is evaluated in terms of its statistical significance. "Statistical significance" refers to the probability that a difference as large as that observed would occur due to random error in the estimates if there were no difference in the prevalence rates for the population groups being compared. The significance of observed

differences in this report is generally reported at the 0.05 and 0.01 levels. When comparing 2000 and 2001 prevalence estimates, the null hypothesis (no difference in the 2000 and 2001 prevalence rates) can be tested against the alternative hypothesis (there is a difference in prevalence rates) using the standard difference in proportions test expressed as follows:

$$Z = \frac{\hat{p}_1 - \hat{p}_2}{\sqrt{var(\hat{p}_1) + var(\hat{p}_2) - 2cov(\hat{p}_1, \hat{p}_2)}},$$

where $\hat{p}_1$ = 2000 estimate, $\hat{p}_2$ = 2001 estimate, $var(\hat{p}_1)$ = variance of 2000 estimate, $var(\hat{p}_2)$ = variance of 2001 estimate, and $cov(\hat{p}_1, \hat{p}_2)$ = covariance between $\hat{p}_1$ and $\hat{p}_2$.

Under the null hypothesis, Z is asymptotically distributed as a normal random variable. Calculated values of Z can therefore be referred to as the unit normal distribution to determine the corresponding probability level (i.e., p value). Because there is a 50 percent overlap in the sampled segments between the 2000 and 2001 NHSDAs, the covariance term in the formula for Z will, in general, be greater than 0. Estimates of Z, along with its p value, were calculated using SUDAAN, using the analysis weights and accounting for the sample design as described in Appendix A. A similar procedure and formula for Z were used for estimated totals and for comparing prevalence estimates for different population subgroups from the same data year.

When examining the effects of subgroup variables with more than two levels on a prevalence measure, a χ^2 test of independence of the subgroup and the prevalence variables was conducted first to control the error level for multiple comparisons. If the χ^2 test indicated some significant differences, the significance of each particular subgroup comparison discussed in the report was tested as indicated above. SUDAAN analytic procedures were used in all tests to properly account for the sample design.

B.3 Nonsampling Error

Nonsampling errors can occur from nonresponse, coding errors, computer processing errors, errors in the sampling frame, reporting errors, and other errors not due to sampling. Nonsampling errors are reduced through data editing, statistical adjustments for nonresponse, close monitoring and periodic retraining of interviewers, and improvement in various quality control procedures.

Although nonsampling errors can often be much larger than sampling errors, measurement of most nonsampling errors is difficult or impossible. However, some indication of the effects of some types of nonsampling errors can be obtained through proxy measures, such as response rates and from other research studies.

B.3.1 Screening and Interview Response Rate Patterns

Response rates for the NHSDA were stable for the period from 1994 to 1998, with the screening response rate at about 93 percent and the interview response rate at about 78 percent (response rates discussed in this appendix are weighted). In 1999, the computer-assisted interviewing (CAI) screening response rate was 89.6 percent, and the interview response rate was

68.6 percent. A more stable and experienced field interviewer (FI) workforce improved these rates in 2000 and continued in 2001. Of the 171,519 eligible households sampled for the 2001 NHSDA main study, 157,471 were successfully screened for a weighted screening response rate of 91.9 percent (Table B.2). In these screened households, a total of 89,745 sample persons were selected, and completed interviews were obtained from 68,929 of these sample persons, for a weighted interview response rate of 73.3 percent. A total of 13,478 (16.5 percent) sample persons were classified as refusals or parental refusals, 4,681 (5.3 percent) were not available or never at home, and 2,657 (4.9 percent) did not participate for various other reasons, such as physical or mental incompetence or language barrier (Table B.3). Tables B.4 and B.5 show the distribution of the selected sample by interview code and age group. The weighted interview response rate was highest among 12 to 17 year olds (82.2 percent), females (74.6 percent), blacks and Hispanics (75.0 and 78.8 percent, respectively), in nonmetropolitan areas (76.7 percent), and among persons residing in the Midwest (74.4 percent) (Table B.6).

The overall weighted response rate, defined as the product of the weighted screening response rate and weighted interview response rate, was 61.5 percent in 1999, 68.6 percent in 2000, and 67.3 percent in 2001. Nonresponse bias can be expressed as the product of the nonresponse rate (1-R) and the difference between the characteristic of interest between respondents and nonrespondents in the population (P_r - P_{nr}). Thus, assuming the quantity (P_r - P_{nr}) is fixed over time, the improvement in response rates in 2000 and 2001 over 1999 will result in estimates with lower nonresponse bias.

B.3.2 Inconsistent Responses and Item Nonresponse

Among survey participants, item response rates were above 97 percent for most questionnaire items. However, inconsistent responses for some items, including the drug use items, were common. Estimates of substance use from the NHSDA are based on the responses to multiple questions by respondents, so that the maximum amount of information is used in determining whether a respondent is classified as a drug user. Inconsistencies in responses are resolved through a logical editing process that involves some judgment on the part of survey analysts and is a potential source of nonsampling error. Because of the automatic routing through the CAI questionnaire (e.g., lifetime drug use questions that skip entire modules when answered "no"), there is less editing of this type than in the paper-and-pencil interviewing (PAPI) questionnaire used prior to the NHSDA redesign in 1999.

In addition, logical editing is used less often because with the CAI data, statistical imputation is relied upon more heavily to determine the final values of drug use variables in cases where there is the potential to use logical editing to make a determination. The combined amount of editing and imputation in the CAI data is still considerably less than the total amount used in prior PAPI surveys. For the 2001 CAI data, for example, 6.7 percent of the estimate of past month hallucinogen use was based on logically edited cases and 6.6 percent on imputed cases, for a combined amount of 13.3 percent. In the 1998 NHSDA (administered using PAPI), the amount of editing and imputation for past month hallucinogen use was 60 and 0 percent, respectively, for a total of 60 percent. The combined amount of editing and imputation for the estimate of past month heroin use was 5.7 percent for the 2001 CAI and 37.0 percent for the 1998 PAPI data.

B.3.3 Validity of Self-Reported Use

NHSDA estimates are based on self-reports of drug use, and their value depends on respondents' truthfulness and memory. Although many studies have generally established the validity of self-report data and the NHSDA procedures were designed to encourage honesty and recall, some degree of underreporting is assumed (Harrell, 1997; Harrison & Hughes, 1997; Rouse, Kozel, & Richards, 1985). No adjustment to NHSDA data is made to correct for this. The methodology used in the NHSDA has been shown to produce more valid results than other self-report methods (e.g., by telephone) (Aquilino, 1994; Turner, Lessler, & Gfroerer, 1992). However, comparisons of NHSDA data with data from surveys conducted in classrooms suggest that underreporting of drug use by youths in their homes may be substantial (Gfroerer, 1993; Gfroerer, Wright, & Kopstein, 1997).

B.4 Incidence Estimates

For diseases, the incidence rate for a population is defined as the number of new cases of the disease, *N*, divided by the person time, *PT*, of exposure or

$$IR = \frac{N}{PT}.$$

The person time of exposure can be measured for the full period of the study or for a shorter period. The person time of exposure ends at the time of diagnosis (e.g., Greenberg, Daniels, Flanders, Eley, & Boring, 1996, pp. 16-19). Similar conventions are applied for defining the incidence of first use of a substance.

Beginning in 1999, the NHSDA questionnaire allows for collection of year and month of first use for recent initiates. Month, day, and year of birth are also obtained directly or imputed in the process. In addition, the questionnaire call record provides the date of the interview. By imputing a day of first use within the year and month of first use reported or imputed, the key respondent inputs in terms of exact dates are known. Exposure time can be determined in terms of days and converted to an annual basis.

Having exact dates of birth and first use also allows the person time of exposure during the targeted period, *t*, to be determined. Let the target time period for measuring incidence be specified in terms of dates; for example, the period 1998 would be specified as

$$t = [t_1, t_2) = [1\ Jan\ 1998, 1\ Jan\ 1999),$$

a period that includes 1 January 1998 and all days up to but not including 1 January 1999. The target age group can also be defined by a half-open interval as $a = [a_1, a_2)$. For example, the age group 12 to 17 would be defined by $a = [12, 18)$ for persons at least age 12, but not yet age 18. If person *i* was in age group a during period *t*, the time and age interval, $L_{t,a,i}$, can then be determined by the intersection:

$$L_{t,a,i} = [t_1,t_2) \cap [DOB_i\, MOB_i\, YOB_i + a_1, DOB_i\, MOB_i\, YOB_i + a_2),$$

assuming the time of birth can be written in terms of day (DOB_i), month (MOB_i), and year (YOB_i). Either this intersection will be empty ($L_{t,a,i} = \varnothing$) or it will be designated by the half-open interval, $L_{t,a,i} = [m_{1,i}, m_{2,i})$, where

$$m_{1,i} = Max\{t_1, (DOB_i\, MOB_i\, YOB_i + a_1)\}$$

and

$$m_{2,i} = Min\{t_2, (DOB_i\, MOB_i\, YOB_i + a_2)\}.$$

The date of first use, $t_{fu,d,i}$, is also expressed as an exact date. An incident of first drug *d* use by person *i* in age group *a* occurs in time *t* if $t_{fu,d,i} \in [m_{1,i}, m_{2,i})$. The indicator function $I_i(d, a, t)$ used to count incidents of first use is set to 1 when $t_{fu,d,i} \in [m_{1,i}, m_{2,i})$ and to 0 otherwise. The person-time exposure measured in years and denoted by $e_i(d,a,t)$ for a person *i* of age group *a* depends on the date of first use. If the date of first use precedes the target period ($t_{fu,d,i} < m_{1,i}$), then $e_i(d,a,t) = 0$. If the date of first use occurs after the target period or if person *i* has never used drug *d*, then

$$e_i(d,a,t) = \frac{m_{2,i} - m_{1,i}}{365}.$$

If the date for first use occurs during the target period $L_{t,a,i}$, then

$$e_i(d,a,t) = \frac{t_{fu,d,i} - m_{1,i}}{365}.$$

Note that both $I_i(d,a,t)$ and $e_i(d,a,t)$ are set to 0 if the target period $L_{t,a,i}$ is empty (i.e., person *i* is not in age group *a* during any part of time t). The incidence rate is then estimated as a weighted ratio estimate:

$$IR(d,a,t) = \frac{\sum_i w_i I_i(d,a,t)}{\sum_i w_i e_i(d,,a,t)}$$

where the w_i are the analytic weights.

Prior to the 1999 survey, exact date data were not available for computing incidence rates. For these rates, a person was considered to be of age *a* during the entire time interval *t*, if his/her a^{th} birthday occurred during time interval *t* (generally, a single year). If the person initiated use during the year, the person-time exposure was approximated as one-half year for all such persons rather than computing it exactly for each person.

Because of the new methodology, the incidence estimates discussed in Chapter 5 are not strictly comparable with the estimates before the 1999 NHSDA. The estimates in this report are based on retrospective reports of age at first drug use by survey respondents interviewed during 1999 to 2001. Because they are based on retrospective reports as was the case for earlier estimates, they may be subject to some of the same kinds of biases.

Bias due to differential mortality occurs because some persons who were alive and exposed to the risk of first drug use in the historical periods shown in the tables died before the 1999-2001 NHSDAs were conducted. This bias is probably very small for estimates shown in

this report. Incidence estimates are also affected by memory errors, including recall decay (tendency to forget events occurring long ago) and forward telescoping (tendency to report that an event occurred more recently than it actually did). These memory errors would both tend to result in estimates for earlier years (i.e., 1960s and 1970s) that are downwardly biased (because of recall decay) and estimates for later years that are upwardly biased (because of telescoping). There is also likely to be some underreporting bias due to social acceptability of drug use behaviors and respondents' fear of disclosure. This is likely to have the greatest impact on recent estimates, which reflect more recent use and reporting by younger respondents. Finally, for drug use that is frequently initiated at age 10 or younger, estimates based on retrospective reports 1 year later underestimate total incidence because 11-year-old (and younger) children are not sampled by the NHSDA. Prior analyses showed that alcohol and cigarette (any use) incidence estimates could be significantly affected by this. Therefore, for these drugs only 2000 age-specific, and not overall, estimates were made. Likewise for these drugs, 1999 estimates were made using 2001 NHSDA data and 1998 estimates were made using 2000 and 2001 NHSDA data.

B.5 Serious Mental Illness Estimates

For the 2001 NHSDA, mental health among adults was measured using a scale to ascertain serious mental illness (SMI). This scale consisted of six questions that ask respondents how frequently they experienced symptoms of psychological distress during the 1 month in the past year when they were at their worst emotionally. The use of this scale is based on a methodological study designed to evaluate several screening scales for measuring SMI in the NHSDA. These scales consisted of a truncated version of the World Health Organization (WHO) Composite International Diagnostic Interview Short Form (CIDI-SF) scale (Kessler, Andrews, Mroczek, Üstün, & Wittchen, 1998), the K10/K6 scale of nonspecific psychological distress (Furukawa, Andrews, Slade, & Kessler, in press), and the WHO Disability Assessment Schedule (WHO-DAS) (Rehm et al., 1999).

The methodological study to evaluate the scales consisted of 155 respondents selected from a first-stage sample of 1,000 adults aged 18 or older. First-stage respondents were selected from the Boston metropolitan area and screened on the telephone to determine whether they had any emotional problems. Respondents reporting emotional problems at the first stage were oversampled when selecting the 155 respondents at the second stage. The selected respondents were interviewed by trained clinicians their home using both the NHSDA methodology and using a structured clinical interview. The first interview included the three scales described above using audio computer-assisted self-interviewing (ACASI). Respondents completed the ACASI portion of the interview without discussing their answers with the clinician. After completing the ACASI interview, respondents were then interviewed using the 12-month nonpatient version of the Structured Clinical Interview for DSM-IV (SCID) (First, Spitzer, Gibbon, & Williams, 1997) and the Global Assessment of Functioning (GAF) (Endicott, Spitzer, Fleiss, & Cohen, 1976) to classify respondents as either having or not having SMI.

The data from the 155 respondents were analyzed using logistic regression analysis to predict SMI from the scores on the screening questions. Analysis of the model fit indicated that each of the scales alone and in combination were significant predictors of SMI and the best

fitting models contained either the CIDI-SF or the K6/K10 alone. Receiver operating characteristic (ROC) curve analysis was used to evaluate the precision of the scales to discriminate between respondents with and without SMI. This analysis indicated that the K6 was the best predictor. The results of the methodological study are described in more detail in a forthcoming paper (Kessler et al., in press).

To score the items on the K6 scales, they were first coded from 0 to 4 and summed to yield a number between 0 and 24. This involved transforming response categories for the six questions (DSNERV1, DSHOPE, DSFIDG, DSNOCHR, DSEFFORT, and DSDOWN) given below so that "all of the time" is coded 4, "most of the time" is coded 3, "some of the time" 2, "a little of the time" 1, and "none of the time" 0, with "don't know" and "refuse" also coded 0. Summing across the transformed responses obtains a score with a range from 0 to 24. Respondents with a total score of 13 or greater were classified as having a past year SMI. This cutpoint was chosen to equalize false positives and false negatives.

The questions comprising the K6 scale are given below:

DSNERV1 Most people have periods when they are not at their best emotionally. Think of one month in the past 12 months when you were the most depressed, anxious, or emotionally stressed. If there was no month like this, think of a typical month.

During that month, how often did you feel nervous?

1 All of the time
2 Most of the time
3 Some of the time
4 A little of the time
5 None of the time
DK/REF

Response categories are the same for the following questions:

DSHOPE During that same month when you were at your worst emotionally . . .how often did you feel hopeless?

DSFIDG During that same month when you were at your worst emotionally . . . how often did you feel restless or fidgety?

DSNOCHR During that same month when you were at your worst emotionally . . . how often did you feel so sad or depressed that nothing could cheer you up?

DSEFFORT During that same month when you were at your worst emotionally . . . how often did you feel that everything was an effort?

DSDOWN During that same month when you were at your worst emotionally . . . how often did you feel down on yourself, no good, or worthless?

Table B.1 Summary of 2001 NHSDA Suppression Rules

Estimate	Suppress if:
Prevalence rate, $\hat{p}$, with nominal sample size, n, and design effect, *deff*	The estimated prevalence rate, $\hat{p}$, is < 0.00005 or ≥ 0.99995, or $\frac{SE(\hat{p}) / \hat{p}}{-\ln(\hat{p})} > 0.175$ when $\hat{p} \leq 0.5$, or $\frac{SE(\hat{p}) / (1 - \hat{p})}{-\ln(1 - \hat{p})} > 0.175$ when $\hat{p} > 0.5$, or $Effective\ n < 68$, or $n < 100$ where $Effective\ n = \frac{n}{deff}$ Note: The rounding portion of this suppression rule for prevalence rates will produce some estimates that round at one decimal place to 0.0 or 100.0 percent but are not suppressed from the tables.
Estimated number (numerator of $\hat{p}$)	The estimated prevalence rate, $\hat{p}$, is suppressed. Note: In some instances when $\hat{p}$ is not suppressed, the estimated number may appear as a 0 in the tables; this means that the estimate is > 0 but < 500 (estimated numbers are shown in thousands).
Mean age at first use, $\bar{x}$, with nominal sample size, n	$RSE(\bar{x}) > 0.5$, or $n < 10$
Incidence rate, $\hat{r}$	Rounds to < 0.1 per 1,000 person-years of exposure, or $RSE(\hat{r}) > 0.5$
Number of initiates, $\hat{t}$	Rounds to < 1,000 initiates, or $RSE(\hat{t}) > 0.5$

Source: SAMHSA, Office of Applied Studies, National Household Survey on Drug Abuse, 2001.

Table B.2 Weighted Percentages and Sample Sizes for 1999 to 2001 NHSDAs, by Screening Result Code

Screening Result	1999 NHSDA		2000 NHSDA		2001 NHSDA	
	Sample Size	Weighted Percentage	Sample Size	Weighted Percentage	Sample Size	Weighted Percentage
Total Sample	223,868	100.00	215,860	100.00	203,544	100.00
Ineligible cases	36,026	15.78	33,284	15.09	32,025	15.40
Eligible cases	187,842	84.22	182,576	84.91	171,519	84.60
Ineligibles	36,026	100.00	33,284	100.00	32,025	100.00
Vacant	18,034	49.71	16,796	50.76	16,489	51.71
Not a primary residence	4,516	12.90	4,506	13.26	4,706	14.69
Not a dwelling unit	4,626	12.70	3,173	9.33	2,913	8.66
All military personnel	482	1.22	414	1.21	327	0.93
Other, ineligible	8,368	23.46	8,395	25.43	7,590	24.00
Eligible Cases	187,842	100.00	182,576	100.00	171,519	100.00
Screening complete	169,166	89.63	169,769	92.84	157,471	91.86
No one selected	101,537	54.19	99,999	55.36	90,530	52.11
One selected	44,436	23.63	46,981	25.46	43,601	25.94
Two selected	23,193	11.82	22,789	12.03	23,340	13.82
Screening not complete	18,676	10.37	12,807	7.16	14,048	8.14
No one home	4,291	2.38	3,238	1.82	3,383	1.90
Respondent unavailable	651	0.36	415	0.24	392	0.24
Physically or mentally incompetent	419	0.24	310	0.16	357	0.20
Language barrier—Hispanic	102	0.06	83	0.05	130	0.09
Language barrier—other	486	0.28	434	0.27	590	0.39
Refusal	11,097	5.92	7,535	4.14	8,525	4.93
Other, access denied	1,536	1.08	748	0.45	613	0.35
Other, eligible	38	0.02	7	0.00	9	0.00
Other, problem case	56	0.03	37	0.02	49	0.03

Source: SAMHSA, Office of Applied Studies, National Household Survey on Drug Abuse, 1999, 2000, and 2001.

Table B.3 Weighted Percentages and Sample Sizes for 1999 to 2001 NHSDAs, by Final Interview Code, *among Persons Aged 12 or Older*

	1999 NHSDA		2000 NHSDA		2001 NHSDA	
Final Interview Code	**Sample Size**	**Weighted Percentage**	**Sample Size**	**Weighted Percentage**	**Sample Size**	**Weighted Percentage**
Total Selected Persons	89,883	100.00	91,961	100.00	89,745	100.00
Interview complete	66,706	68.55	71,764	73.93	68,929	73.31
No one at dwelling unit	1,795	2.13	1,776	2.02	1,728	2.00
Respondent unavailable	3,897	4.53	3,058	3.52	2,953	3.30
Breakoff	50	0.07	72	0.09	79	0.12
Physically/mentally incompetent	1,017	2.62	1,053	2.57	1,020	2.43
Language barrier—Spanish	168	0.12	109	0.08	190	0.17
Language barrier—Other	480	1.46	441	1.06	470	1.30
Refusal	11,276	17.98	10,109	14.99	10,961	15.60
Parental refusal	2,888	1.01	2,655	0.88	2,517	0.92
Other	1,606	1.53	924	0.86	898	0.86

Source: SAMHSA, Office of Applied Studies, National Household Survey on Drug Abuse, 1999, 2000, and 2001.

Table B.4 Weighted Percentages and Sample Sizes for 1999 to 2001 NHSDAs, by Final Interview Code, *among Youths Aged 12 to 17*

	1999 NHSDA		2000 NHSDA		2001 NHSDA	
Final Interview Code	**Sample Size**	**Weighted Percentage**	**Sample Size**	**Weighted Percentage**	**Sample Size**	**Weighted Percentage**
Total Selected Persons	32,011	100.00	31,242	100.00	28,188	100.00
Interview complete	25,384	78.07	25,756	82.58	23,178	82.18
No one at dwelling unit	322	1.09	278	0.86	254	0.92
Respondent unavailable	872	3.04	617	2.05	551	2.13
Breakoff	13	0.03	18	0.05	17	0.05
Physically/mentally incompetent	244	0.76	234	0.76	219	0.79
Language barrier—Spanish	15	0.03	10	0.03	18	0.08
Language barrier—Other	58	0.18	50	0.20	34	0.11
Refusal	1,808	5.97	1,455	4.52	1,247	4.14
Parental refusal	2,885	9.50	2,641	8.35	2,517	8.95
Other	410	1.33	183	0.59	153	0.64

Source: SAMHSA, Office of Applied Studies, National Household Survey on Drug Abuse, 1999, 2000, and 2001.

Table B.5 Weighted Percentages and Sample Sizes for 1999 to 2001 NHSDAs, by Final Interview Code, *among Persons Aged 18 or Older*

	1999 NHSDA		2000 NHSDA		2001 NHSDA	
Final Interview Code	**Sample Size**	**Weighted Percentage**	**Sample Size**	**Weighted Percentage**	**Sample Size**	**Weighted Percentage**
Total Selected Persons	57,872	100.00	60,719	100.00	61,557	100.00
Interview complete	41,322	67.41	46,008	72.92	45,751	72.29
No one at dwelling unit	1,473	2.25	1,498	2.16	1,474	2.12
Respondent unavailable	3,025	4.71	2,441	3.69	2,402	3.43
Breakoff	37	0.07	54	0.09	62	0.13
Physically/mentally incompetent	773	2.85	819	2.78	801	2.62
Language barrier—Spanish	153	0.13	99	0.09	172	0.18
Language barrier—Other	422	1.62	391	1.16	436	1.43
Refusal	9,468	19.41	8,654	16.22	9,714	16.92
Parental refusal	3	0.00	14	0.01	0	0.00
Other	1,196	1.55	741	0.89	745	0.88

Source: SAMHSA, Office of Applied Studies, National Household Survey on Drug Abuse, 1999, 2000, and 2001.

Table B.6 Response Rates and Sample Sizes for the 1999 to 2001 NHSDAs, by Demographic Characteristics

	1999 NHSDA			2000 NHSDA			2001 NHSDA		
	Selected Persons	Completed Interviews	Weighted Response Rate	Selected Persons	Completed Interviews	Weighted Response Rate	Selected Persons	Completed Interviews	Weighted Response Rate
Total	**89,883**	**66,706**	**68.55%**	**91,961**	**71,764**	**73.93%**	**89,745**	**68,929**	**73.31%**
Age in Years									
12-17	32,011	25,384	78.07%	31,242	25,756	82.58%	28,188	23,178	82.18%
18-25	30,439	22,151	71.21%	29,424	22,849	77.34%	30,304	22,931	75.51%
26 or older	27,433	19,171	66.76%	31,295	23,159	72.17%	31,253	22,820	71.75%
Gender									
Male	43,883	31,987	67.12%	44,899	34,375	72.68%	43,949	33,109	71.92%
Female	46,000	34,719	69.81%	47,062	37,389	75.09%	45,796	35,820	74.58%
Race/Ethnicity									
Hispanic	11,203	8,755	74.59%	11,454	9,396	77.95%	10,885	8,777	78.78%
White	63,211	46,272	67.98%	64,517	49,631	73.39%	63,228	48,016	72.65%
Black	10,552	8,044	70.39%	10,740	8,638	76.19%	10,584	8,295	74.98%
All other races	4,917	3,635	59.28%	5,250	4,099	67.31%	5,048	3,841	66.65%
Region									
Northeast	16,794	11,830	64.03%	18,959	14,394	71.68%	19,180	14,444	71.02%
Midwest	24,885	18,103	69.63%	25,428	19,355	73.23%	25,560	19,212	73.25%
South	27,390	21,018	70.93%	27,217	22,041	76.38%	26,278	20,609	74.44%
West	20,814	15,755	67.47%	20,357	15,974	72.68%	18,727	14,664	73.51%
County Type									
Large metropolitan	36,101	25,901	65.15%	37,754	28,744	71.77%	35,395	26,403	71.00%
Small metropolitan	30,642	22,612	69.98%	31,400	24,579	74.96%	31,740	24,575	74.66%
Nonmetropolitan	23,140	18,193	74.97%	22,807	18,441	77.58%	22,610	17,951	76.72%

Source: SAMHSA, Office of Applied Studies, National Household Survey on Drug Abuse, 1999, 2000, and 2001.

Appendix C: Effects of Changes in Survey Protocol on Trend Measurement

C.1 Background

The 2001 National Household Survey on Drug Abuse (NHSDA) results showed some unexpected increases in trend measures, particularly in the lifetime use of marijuana. As a result, a review of any methodological changes and their potential impact on estimates of prevalence was conducted concurrently with preparation of this report. The ultimate focus of this review centered on two methodological issues. The first was an embedded experimental design studying the impact of two alternative monetary incentive procedures. The second was the implementation of a field interviewer (FI) observation plan that led to the implementation of a continuing training and supervision program whose aim was the improvement in compliance with the intended data collection protocols.

Comparable protocols for data collection, data processing, sample design, and statistical analysis applied to each annual survey are essential for effective measurement of trends in substance use. Although a major shift in survey methodology occurred in 1999 with the introduction of computer-assisted data collection and a new 50-State sample design, the goal since then has been to maintain a consistent protocol in all areas following that transition. However, this goal did not appear to be inconsistent with maintaining or improving response rates, implementing procedures to ensure compliance with the established protocols, or implementing a general program of data quality improvement.

Due to concerns with response rates, an experimental study of the impact of monetary incentives was designed and implemented in the first two quarters of 2001. The design involved a sample of 251 FI regions (out of a total of 900 FI regions nationally). During the first quarter, one of the two monetary incentives ($20 or $40) was offered to respondents for completing the computer-assisted interviewing (CAI) questionnaire in one randomly selected segment in each FI region. There was no incentive offered in the other sample segment. During the second quarter, the other incentive amount was offered to respondents for completing the CAI questionnaire in one randomly selected segment. The sample of FI regions selected for the incentive experiment was selected to be nationally representative (with proper weighting) and to include a higher proportion of areas known to have historically low response rates. Because the experiment was embedded in the national sample, the incentives offered had some influence on national response rates. The embedded experimental design and the total sample design are summarized in Table C.1 at the end of the appendix. The FI regions involved in the incentive experiment constituted about 28 percent of all FI regions, but the sample area segments where any incentive was offered constituted only about 7 percent of all area segments.

A program of FI observation was initiated in quarters 1 and 2. An initial 39 FIs were observed between February 3rd and April 15th. An additional 111 FIs were observed between July 1st and August 11th.

As a result of the field observations, an emphasis was placed on conforming with established study protocols. Special telephone training sessions were developed emphasizing correct screening and interviewing procedures and the need to follow established protocols. A guidance document, *Steps to Maximize Data Quality*, was reviewed with all FIs in early July. Additional guidelines for training interviews, *Reviewing NHSDA Procedures*, were developed and used by field supervisors in a series of six weekly conference calls with interviewers over the period from October 22nd through November 26th. Session topics included screening, transition from screening to interview, front- and back-end computer-assisted personal interviewing (CAPI) portions (two sessions), properly administering audio computer-assisted self-interviewing (ACASI), and verification and wrap-up. Although this special training did not define any change in protocol, it did enforce the need to follow established protocol and, as a result, could have influenced the comparability of 2000 and 2001 data primarily for the last 6 months of the year.

A number of special analyses were initiated to investigate potential explanations for the observed 2000 to 2001 change in prevalence measures. These can be grouped as follows:

- review of postsurvey data-processing procedures (editing, imputation, and weighting);
- analysis of the incentive experiment effects;
- further analysis of FI experience effects;
- further analysis of historic response rate and changes in response rate;
- analysis of proxy measures of FI behavior (timing, debriefing questions, etc.);
- alternative measures of change based on retrospective data;
- focused analysis on first two quarters of 2000 and 2001; and
- questionnaire changes.

C.2 Postsurvey Data Processing

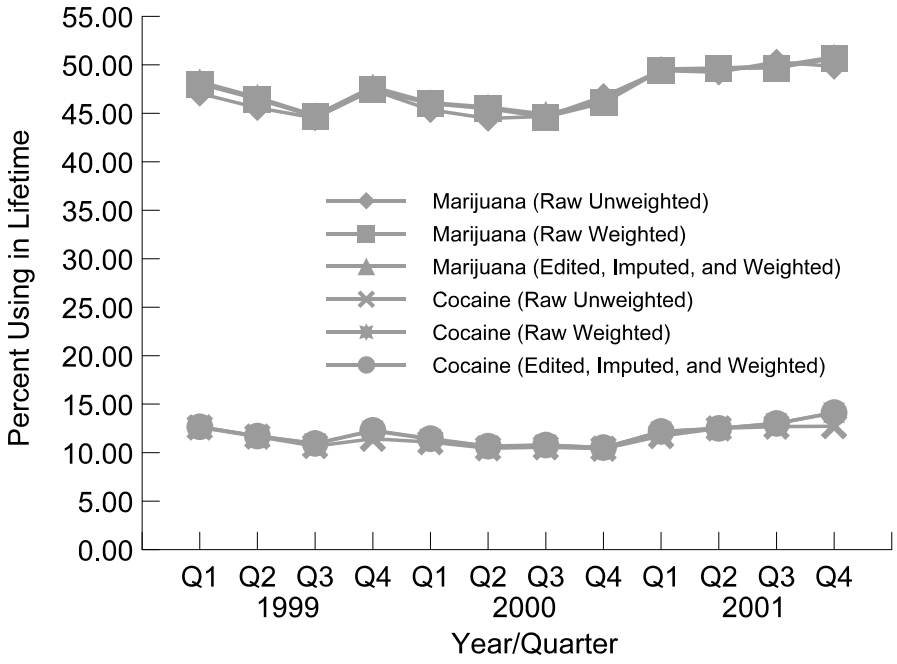
The effects of editing, imputation, and weighting on prevalence measures were examined by comparing estimates before and after processing. Comparable estimates were produced by quarterly subsamples and by age groups to identify any unusual impacts limited to shorter time periods or to a subset of the data.

An important set of initial analyses focused on unedited respondent data. These analyses investigated whether increases in prevalence in 2001 might be due in part to increased reporting of drug use by respondents prior to the data being edited or imputed. Trends in unedited data among specific age groups were examined by quarter for 1999 to 2001, both on an unweighted and weighted basis. To promote consistency in the examination of the trends, data resulting from changes to the instrument in 2000 and 2001, such as the addition of those described in Section C.9, were generally not taken into account.

For most of the drug use measures and age groups, the unedited trend data indicated that the significant differences in drug use estimates between 2000 and 2001 were due to higher percentages of respondents reporting drug use in at least some quarters of 2001. These results held for both weighted and unweighted data. Therefore, the unedited, unimputed, and unweighted data indicated the same trends as the fully processed data.

Figure C.1 shows the overall impact of the editing, imputing, and weighting processes on lifetime marijuana and cocaine use estimates for persons aged 18 to 25. Plots across quarters are shown for raw unweighted data, for raw weighted data, and for edited, imputed, and weighted data. Note that the raw (unedited) weighted data and the edited, imputed, and weighted data track very tightly across quarters. The raw unweighted data exhibits a different level than the other two measures in most quarters, but shows the same general trend over longer periods of time.

Figure C.1 Lifetime Marijuana and Cocaine Use among 18 to 25 Year Olds, by Year and Quarter: 1999, 2000, and 2001



C.3 Incentive Experiment Effects

The results of the incentive experiment were reported by Eyerman and Bowman (2001). Selected conclusions from their report are as follows:

- The $20 and $40 incentive payments each produced about a 10-point gain in overall response rates when compared with the $0 control group. The overall response rate was significantly higher for $40 than the $20 incentive within many of the subgroups addressed in the analysis.

- Both incentive payment treatments more than paid for themselves due to decreased costs of follow-up and more productive screening resulting from the improved response rates.

- Some significant differences in prevalence rates were noted in comparisons between the $40 treatment and the control in some of the age, race, and historical response rate groups: two cases of significantly higher past month alcohol use and one case of significantly lower past month cigarette use.

Wright, Bowman, Butler, and Eyerman (2002) conducted additional analysis of the 2001 incentive experiment. By adjusting the weights for predicted response propensity based on incentive treatment (and other covariates), applying regression models to the full sample data, and combining $20 and $40 as a single treatment level, they obtained statistically significant incentive effects on prevalence measures for past year use of marijuana (a positive effect with p = .027) and for past month use of cocaine (a negative effect with p = .033). Past month marijuana use showed a marginally significant positive effect for incentives (p = .055). Surprisingly, no relationship (after adjustment for other covariates) was found between incentives and lifetime use of marijuana. This may indicate that most persons were willing to report lifetime marijuana use without an incentive, possibly because lifetime use is not as stigmatized. All four sets of regression analyses also showed a negative relationship of prevalence measures with historic response rates.

Preliminary data review indicated some possible carryover effects of the experiment into quarters 3 and 4 of 2001. To study these potential effects, the data for 1999, 2000, and 2001 were partitioned based on the 251 FI regions involved in the incentive experiment and the remaining 649 non-incentive experiment FI regions (see Table C.1). The special weight developed for analyzing the incentive experiment was applied to the 251 incentive experiment FI regions; a pseudo-weight was developed for the 649 non-incentive experiment areas. Both sets of weights were adjusted to estimate the total population. To partially calibrate the weights for the two subpopulations, poststratification by gender and five age categories was implemented.

Although prevalence rates between the incentive FI regions and non-incentive FI regions were not the primary interest, statistical tests were applied to determine whether the incentive regions produce higher prevalence rates. Prevalence estimates for five substances (marijuana, cocaine, cigarettes, alcohol, and hallucinogens) at three recency of use levels (lifetime, past year, and past month) and for three dependency measures (illicit drugs, alcohol, and marijuana) were analyzed. Based on four quarters (even though the incentive experiment was only fielded in the

251 FI regions in quarters 1 and 2) of data across all age groups, only lifetime marijuana showed a statistically significant difference between incentive and non-incentive FI regions in 2001; the higher estimate was measured for the incentive FI regions.

Additional statistical tests were applied to trend measures (year-to-year change) for the two samples. Estimates of change from 2000 to 2001 for these 15 prevalence and 3 dependence measures were positive in every case for both subsamples. Both subsamples showed statistically significant positive trend for five measures: lifetime marijuana, past year marijuana, past year cocaine, past year alcohol, and past year hallucinogens. For these five measures, the estimated change based on the incentive FI region subsample was always higher or at least as great as the estimated change based on the non-incentive FI region subsample. Only the incentive subsample showed a statistically significant trend measure in seven other cases: lifetime cocaine, lifetime alcohol, lifetime hallucinogens, past month marijuana, past month alcohol, dependence on illicit drugs, and dependence on marijuana. Only the non-incentive subsample showed a statistically significant trend measure in one case: past month hallucinogens. These results offered little direct evidence of carryover effects of the incentive experiment to quarters 3 and 4.

C.4 Field Interviewer Experience Effects

In examining the trend from 1998 to 1999 based on paper-and-pencil interviewing (PAPI), the FI experience was found to be a factor in explaining the observed trend (see Appendix D in Office of Applied Studies [OAS], 2000b). It was discovered that the more experience the interviewers gained, the less likely it was that the respondent would report drug use. Because 1999 was the final year of PAPI, an adjustment procedure was developed through special weight calibration procedures to remove the FI experience effect from the 1998 to 1999 trend measures. It was necessary to do this because the distribution of interviewers by their prior experience was much different in 1999 from what it had been in 1998. This difference in experience occurred because the size of the interviewing staff increased to accommodate an increase in planned sample size from about 25,500 in 1998 to 70,000 in 1999. Table C.2 shows the distribution of interviewers by interviewer's experience in prior years for 1999, 2000, and 2001. Because the size of the interviewing staff required decreased in 2000 and remained stable in 2001, the experience distribution changed again from 1999 to 2000, but remained fairly stable from 2000 to 2001. The 2000 Summary of Findings (OAS, 2001b, pp. 83-90) discusses the potential impact of the change in FI experience on selected measures of prevalence. Because 2000 was the second year in a continuing series of annual estimates based on the new CAI methodology and the impacts of FI experience were small, no adjustments to 1999 or 2000 data were initiated to reflect the change in FI experience. However, had such adjustments been implemented, some of the substance use measures that showed a small, not statistically significant, decrease may have been adjusted to show a small, not statistically significant, increase in 2000 (OAS, 2001b, p. 86 and Table B-17, p. 91).

Analysis of interviewer experience conducted in 1999 and 2000 used a two-part experience variable based on (1) NHSDA experience in a prior year and (2) order of interview in the current year (1-19, 20-39, 40-59, 60-99, 100 or more). A number of analyses were conducted using these variables to see whether the experience effect was diminishing over time. The analyses showed fewer significant interviewer experience effects in 2001 compared with 1999 or

2000, but some effect remained. A single comprehensive measure of interviewer experience was developed that focused primarily on the number of interviews completed since the introduction of CAI in 1999. Three categories were defined as follows:

- *Inexperienced*: 0-39 interviews since January 1, 1999 (and, for the 1999 survey only, no NHSDA experience prior to 1999);

- *Experienced*: 40-99 interviews since January 1, 1999 (and/or, for the 1999 survey only, some NHSDA experience prior to 1999); and

- *Highly experienced*: 100 or more interviews since January 1, 1999.

Based on this definition of prior experience, the distribution of interviews by interviewer experience is shown in Table C.3. The proportion of interviews conducted by highly experienced interviewers continued to grow due to year-to-year retention. The proportion of interviews conducted by inexperienced interviews declined slightly in 2001, while the proportion of interviews conducted by interviewers in the experienced (but not highly experienced) category declined by almost one half.

Because the incentive experiment FI regions were considered to have influenced reported substance use prevalence, a logistic regression analysis restricted to the non-incentive experiment areas was conducted using 1999, 2000, and 2001 data from these areas. Also examined was whether the experience effect may have diminished over the 3-year period, but no clear evidence was found to support this. Improved compliance with the prescribed study protocols might have had a positive (but not detectable) influence on reducing any interviewer experience effects in the last half of the 2001 data collection year. Using the data from all 3 years (649 non-incentive regions only), Table C.4 shows how adjustment for interviewer experience would have affected the odds ratios (ORs) for trends in reported substance use. Unadjusted ORs are based on a simple main effects model (i.e., only the variables designating the survey year) with no covariates. Adjusted ORs are based on the main effects for year-after adjustment for interviewer experience (the three levels shown above), Census region, gender, age group, race/ethnicity, population density, and gender by age interaction. As might be expected due to the continuing shift toward more highly experienced interviewers shown in Table C.3, adjustments for interviewer experience tended to increase the ORs. This general effect also was supported by some a limited number of tabled estimates produced using only data from interviews conducted by inexperienced interviewers.

The relative experience levels of FIs can vary over time in response to the demands of the survey. In addition, the impact of FI experience on the quality of the data can be subtle and thus difficult to control. The higher proportion of inexperienced interviewers in 1999 was the direct result of interviewer staff additions required by the increase in sample size by about threefold in 1999 to accommodate the large sample required for the 50-State design and a sample supplement completed using the 1998 and prior year PAPI mode. Since then, the size of the interviewing staff has stabilized and declined somewhat as the most productive interviewers have been retained, but experience has continued to accumulate resulting in a higher proportion of highly

experienced interviewers (those having completed 100 or more interviews since January 1, 1999).

Adjustments in trend measures for the changes in interviewer experience distributions had the effect of increasing selected substance use estimates for 2000 relative to 1999 and for 2001 relative to 2000. However, it needs to be noted that the estimated experience effect in this model was based on an average across all 3 years and that training effects in 2001 may have resulted in significantly reducing the experience effect, especially in the second half of the year. Some of the training and supervision methods implemented in 2001 were precisely what was needed to make sure that experienced interviewers continued to follow the proper survey protocol long after their initial comprehensive training. The fact that they were successful is supported by the data showing the reduction in the percentage of short interviews discussed in Section C.6.

C.5 Changes in Response Rates

Final analytic weights are adjusted for nonresponse and calibrated to agree with Census projections for geographic and selected demographic population distributions. Unadjusted, but design-based, weights were used to examine quarterly response rates by age, gender, and population density to see whether patterns of nonresponse were changing in any systematic way. The unadjusted weights also were used to examine the quarterly weighted distributions of study respondents by gender, race, Hispanic origin, population density, marital status, education, employment status, and income and program participation. No large or unusual shifts in distributions were noted across quarters. It should also be noted that some of the variations by quarter in these distributions were, subsequently, removed by the weight calibration process.

The incentive experiment clearly showed that incentives increased response rates in 2001 among those cases receiving a $20 or $40 incentive. Increased response rates also occurred in 2000, but these were attributed to more adequate interviewer staffing, a general improvement in interviewer performance as a result of continuing interviewers accumulating experience and improving interviewing skills, retention of the interviews with successful records, and fine-tuning of training and supervisory practices. If the offering of incentives to respondents improves response and concurrently increases some prevalence measures, the reason for the increase in prevalence measures could be explained in at least two ways:

1. Persons who responded with incentives, but would not have responded without them, are different and have higher substance use than persons who would respond with or without incentives.

2. Incentives motivate (or obligate) respondents to admit to substance use that they might not have admitted without the incentive.

In the modeling work done to evaluate incentive effects discussed above, historic response rates were found consistently to be negatively related to substance use prevalence. Because the historic response rate is observed and not controlled in any experimental fashion,

this relationship does not imply causation and could simply indicate that other unknown factors lead to both lower response rates and higher substance use.

To try to understand the impact that changing response rates might have on prevalence rates, the 900 FI regions were classified by three levels of historic response rates and three levels of annual change in response rate. The change in reported prevalence rates for these nine subgroups were then measured for 1999 to 2001. The historic response rate levels were as follows:

- *Low*: Less than 63 percent response rate in the initial year;
- *Midrange*: 63 to 77 percent response rate in the initial year; and
- *High*: Above 77 percent response rate in the initial year.

The annual changes in response rates were classified as follows:

- decrease by 5 percent or more,
- little change (less than 5 percent), and
- increase by 5 percent or more.

Twelve measures (lifetime, past year, and past month reported use of any illicit drug, any illicit drug except marijuana, marijuana, and psychotherapeutics) were studied. All 12 measures showed statistically significant increases from 2000 to 2001. Only one statistically significant change from 1999 to 2000 was detected for these same 12 measures, and it was a negative change. Table C.5 summarizes an analysis of the observed changes from 1999 to 2000 and from 2000 to 2001. Surprisingly, the largest relative increases in prevalence measures occurred in 2001 in areas where the 2000 response rate was already high and was then increased even more; in this group of FI regions, the average relative increase in the 12 substance use measures was over 47 percent compared with about 15 percent over all regions.

The pattern of change from 1999 to 2000 is less clear perhaps as a result of the several reasons for poor response that occurred in 1999, the startup year for the expanded 50-State sample design.

Although Table C.5 shows the relationship between response rates and prevalence levels for 2000 and 2001, it needs to be noted that overall response rates remained fairly constant at 68 percent. The overall implication of Table C.5 is that the increases in prevalence occurred in almost all cells without regard to historic or current response rates.

C.6 Field Interviewer Behaviors

As noted above, empirical results adjusted for respondent characteristics show that respondents interviewed by experienced interviewers report lower substance use measures than

respondents interviewed by inexperienced interviewers. Mean times required to complete interviews were considered, but did not appear to be a fair measure of interviewer behavior or interviewer influence with the respondent. Given the branching patterns of the CAI instrument, it is inevitable that respondents reporting more substance use will require more time to complete the questionnaire. However, extremely short interview times might indicate some shortcuts or inappropriate prompting of the respondent. An unusually short interview was defined as one completed in 30 minutes or less for the entire questionnaire or 5.8 minutes or less for the core questions completed privately by the respondent. For this analysis, an inexperienced interviewer is defined as one who had completed 20 or fewer CAI interviews since January 1, 1999.

Comparisons of the percentage of short interviews by experience of interviewer were done quarterly for both the entire questionnaire and for the core sections. Quarterly averages are shown in Table C.6 for 1999, 2000, and 2001. Because of some changes to the questionnaire in the modular sections, annual changes in the percentage of short questionnaire times based on the full questionnaire do not accurately reflect any trend. The timing data for the core questionnaire, which remains relatively stable, does allow interpretation of annual changes. The important finding is that the difference between experienced and inexperienced interviewers declined from year to year for both the entire questionnaire and the core sections. In addition, the core questionnaire timing data show that the percentage of questionnaires with short interview times declined by a factor of about 3 for both experienced and inexperienced interviewers between 1999 and 2001. This is important because the core sections of the questionnaire are where questions are asked about substance use and recency of use. Thus, the decrease in short interviews between 2000 and 2001, especially in the core sections, could be a contributory factor to the increased prevalence rates in 2001. This would especially affect the lifetime prevalence rates because the first question always asks the respondent whether he or she has ever used the substance.

In 1999, 2000, and 2001, two comparable interviewer debriefing questions were asked:

Was it necessary for you to assist the respondent in completing the ACASI portion of this interview?

How often did this respondent let you know what his or her answers were as he or she completed the ACASI portion of the interview?

1 = None of the time–I do not know what any of the answers are.
2 = A little of the time–I know what a few of the answers are.
3 = Some of the time–I know what some of the answers are.
4 = A lot of the time–I know what a lot of the answers are.
5 = All of the time–I know what all of the answers are.

Table C.7 shows the unweighted responses given by interviewers to these questions in 1999, 2000, and 2001. The proportion of respondents receiving assistance remained fairly low in all 3 years, but was highest in 2001 at 3.50 percent. The proportion of interviews for which the interviewer knew a little to all of the answers decreased from 1999 to 2001 with the largest decrease (over 2 percent) occurring between 2000 and 2001. This decrease in the overall

percentage of cases where the interviewer reported knowledge of the respondent's answers to the ACASI questions occurred in spite of the increase in the number of respondents receiving some assistance from the interviewer.

C.7 Retrospective Measures of Change in Lifetime Use

The 1999, 2000, and 2001 estimates of the number of lifetime users of marijuana and cocaine show decreases from 1999 to 2000 and unusually large increases from 2000 to 2001. Analysis of data on initiation of use suggests intermediate increases in lifetime use in both 2000 and 2001.

Better measures of change in substance use measures could be obtained with longitudinal samples. Longitudinal data permit one to identify the proportion of people who change their behavior in some way, causing the level of key estimates to increase or decrease. Another method of getting the same information is through retrospective questions that ask the respondent to report current status of substance use and compare it with his/her status of substance use some time earlier, say, a year earlier. Because of problems with memory, particularly related to times that certain behaviors may have begun or ended, the retrospective method may be difficult to implement. For lifetime use measures, it is currently possible to construct an indicator variable that specifies whether the respondent was already a lifetime user a year earlier. Respondents are asked their age at the time of first use, and, if that age is within 1 year of their current age, the respondent also is asked for the month and year of first use. This information, along with the date of the interview, can be used to determine whether the respondent first became a lifetime user during the past year. The current questionnaire does not identify the respondent's earlier status as a past year or past month user except that he/she must have been a lifetime user to qualify as a past year or past month user.

Some preliminary estimates were constructed for annual change in lifetime use status based on the retrospective data derived from current status and date of first use as described above. The methodology ignored the effects of mortality and may understate the change for older age groups where some lifetime users a year earlier are not represented in the change because of death prior to the current survey. Tables C.8 and C.9 compare estimates of change in the number of lifetime users of marijuana and cocaine based on the retrospective estimates from current year data versus differences between current estimates and estimates obtained a year earlier. For both substances, the retrospective method shows an increase in the number of lifetime users for both 2000 and 2001, with the larger increase occurring in 2001. As noted above, the annual-estimates approach shows an overall decrease from 1999 to 2000 and much larger increase from 2000 to 2001.

The increases in the numbers of lifetime users among the older age groups (35 to 49 and 50 or older) is primarily caused by lifetime users from younger cohorts aging into the higher age categories; only very small portions of the increases in these age groups are due to initiation of use during the past year by persons in these age groups. Although more initial users are found among persons aged 26 to 34, the cohort shift is much larger and actually has had the effect of reducing the number of lifetime users in this age group over the 2-year period.

C.8 Analysis Focused on First 6 Calendar Months

One of the final analyses conducted was to produce a subset of the summary tables using data from only the first 6 months of each year and only from the set of FI regions that were not involved in the incentive experiment. The first 6 months were selected to avoid any possible impact of the telephone training procedures on compliance with survey protocols initiated in July 2001. The non-incentive FI regions were chosen to exclude any direct or indirect effects of the incentive experiment. Table C.10 shows some selected comparisons with the full sample data for persons aged 18 to 25. In general, the data for the first 6 months in the non-incentive FI regions showed smaller measures of change with fewer statistically significant trend measures than those based on complete samples for both years. Some of the reduction in statistically significant findings was, of course, due to the reduction in sample size when looking at a subset of the total data. Some of the reduced change is due to limiting of the sample to the non-incentive regions and to the first half of the year when the training effect was less. However, because the change based on the first 6 months was generally only slightly smaller than for the full sample, strong evidence remained for concluding that substance use increased for many of the substances measured.

C.9 Questionnaire Change

Changes to the questionnaire in 2001 also were examined to assess whether some increases in drug use prevalence in 2001 might be attributable to the addition of new questions. However, not all increases in drug use prevalence could be attributed to questionnaire changes. In particular, the content of the sections for marijuana, cocaine, and cigarettes were exactly the same in 2000 and 2001. Thus, the increase in lifetime marijuana use in 2001 that was shown in Figure C.1 for adults aged 18 to 25 could not be explained by changes to the questionnaire.

One change to the questionnaire in 2001 was that follow-up probes were added to persuade respondents to reconsider their answers if they initially refused to indicate whether they had ever used Ecstasy (MDMA) or methamphetamine, or if they refused all questions pertaining to lifetime use of inhalants, pain relievers, tranquilizers, stimulants, or sedatives. However, no respondents who initially refused all questions about lifetime use of inhalants, pain relievers, tranquilizers, stimulants, or sedatives indicated on follow up that they had ever used these drugs. Similarly, no respondents who initially refused to answer the question about lifetime methamphetamine use indicated use on follow-up and only two respondents who initially refused the lifetime Ecstasy question indicated use on follow-up. Therefore, the significant increases in estimates of lifetime use should not be explained by the addition of these new follow-up probes in 2001.

Another important change to the questionnaire in 2001 involved the addition of new questions pertaining to the initiation and recency of use of the hallucinogen Ecstasy. As in 2000, respondents in 2001 also were asked questions about their initiation and recency of use of LSD or PCP. If respondents in 2001 reported more recent use of a specific hallucinogen (i.e., LSD, PCP, or Ecstasy) than what they reported for their recency of use of any hallucinogen, they were prompted to resolve this inconsistency in their answers. If respondents did not resolve the inconsistency (i.e., by changing their general hallucinogen recency to indicate more recent use or

by changing the recency for LSD, PCP, or Ecstasy to indicate less recent use), the editing procedures that had been in place since 1999 favored the information that indicated the most recent use of a hallucinogen. Suppose, for example, that a respondent indicated use of Ecstasy in the past 30 days and indicated use of any hallucinogen more than 30 days ago but within the past 12 months. The respondent would be alerted that these two answers disagreed. If the respondent on follow-up again indicated last using Ecstasy in the past 30 days, the editing procedures logically inferred that this respondent had last used any hallucinogen in the past 30 days. Thus, the new question about recency of use of Ecstasy provided respondents an additional opportunity to indicate more recent use of any hallucinogen. The new questions about Ecstasy use also provided additional data that were not available in 2000 for use in logically editing the hallucinogen recency of use variable.

Table C.11 shows some comparisons of estimates with and without additional questions or follow-up probes. To produce the estimates without the additional questions, the data were re-edited and re-imputed without taking into account information present in these new questions. The largest changes in the estimates occurred for hallucinogens and any illicit drugs other than marijuana for persons aged 18 to 25. However, the differences in estimates of hallucinogen and any illicit drug use other than marijuana between 2000 and 2001 were still significant for this age group when the new hallucinogen questions were not taken into account.

The addition of the new hallucinogen questions in 2001 did affect some estimates of use of hallucinogens and any illicit drug except marijuana for the population aged 12 or older and for age groups other than 18 to 25 year olds. The difference in the estimate of past month use of hallucinogens among the population aged 12 or older was significant between 2000 and 2001 when the estimate for 2001 took into account the new questions but was not significant when the new questions were disregarded. Similarly, past year use of hallucinogens among adults aged 26 or older was significantly higher in 2001 when the new questions were taken into account but was not significantly different between the 2 years in the absence of these new questions. For these estimates, it is safer to conclude that some of the change in levels of estimates should be attributed to the questionnaire changes in 2001 that pertained to Ecstasy.

As substance use phenomena change, it can often become necessary to adjust the measuring instrument to reflect those changes. Changes to the questionnaire in 2001 to obtain more and better data about the use of Ecstasy were implemented in this spirit. An analysis that assumed the 2000 form of the questionnaire for both years showed that some of the increases in the estimates for hallucinogens and for any illicit drug other than marijuana were the result of the questionnaire change.

C.10 Summary

It appears safe to conclude that part of the change in substance use indicated by the 2000 and 2001 annual estimates may be a result of noncomparable data collection methodology, including the implementation of an incentive experiment in a subset of the total sample and the steps taken to ensure better compliance with the intended survey protocol. The intention of both was to obtain higher quality data. If these changes increased the level of the estimates in 2001, it is probably safe to say that any bias in the level of these estimates has been reduced, not

increased. For comparison with 2001, this type of improvement in the quality of current year data concurrently creates a bias in the measures of change. The long-term solution to this problem should be to maintain the higher level of data quality in future surveys and concurrently produce quality estimates both of level and of change.

The review of interviewer experience effects (Section C.4) and the analysis of retrospective measures of lifetime use (Section C.7) both support the conclusion that the reductions in lifetime and past year marijuana use in 2000 may have been overstated and that some small increases from 1999 to 2000 were the more likely reality. The restricted comparisons of 2000 to 2001 using the non-incentive areas and the first 6 months of data (Section C.8) continue to support an increase from 2000 to 2001, but of a somewhat smaller magnitude than the complete data would indicate.

Table C.1 Sample Distribution, by Incentive Experiment Treatments

Sample and Experimental Design Parameters	Quarters 1 and 2	Quarters 3 and 4	Total	Percent of Total
Incentive Experiment Areas				
FI regions (Sampling Strata)	251	251	251	27.9
Area Sample Segments (Total)	1,004	1,004	2,008	27.9
No Monetary Incentive	502	1,004	1,506	20.9
$20 Monetary Incentive	251	0	251	3.5
$40 Monetary Incentive	251	0	251	3.5
Remaining Areas				
FI regions (Sampling Strata)	649	649	649	72.1
Area Sample Segments (Total)	2,596	2,596	5,192	72.1
No Monetary Incentive				
All Areas				
FI Regions (Sampling Strata)	900	900	900	100.0
Area Sample Segments	3,600	3,600	7,200	100.0
No Monetary Incentive	3,098	3,600	6,698	93.0
$20 Monetary Incentive	251	0	251	3.5
$40 Monetary Incentive	251	0	251	3.5

Table C.2 Unweighted Counts of Interviewers, by Experience in Prior Years: 1999, 2000, and 2001

Prior Interviewer NHSDA Experience	CAI Interviewers					
	1999		2000		2001	
	No.	%	No.	%	No.	%
None	1,544	86.40	368	27.57	325	28.99
Some	243	13.60	967	72.43	796	71.01
Total	1,787	100.00	1,335	100.00	1,121	100.00

Table C.3 Distribution of Interviews, by Interviewer Experience: Unweighted and Weighted

Interviewer Experience	1999		2000		2001	
	Unwtd.	Wtd.	Unwtd.	Wtd.	Unwtd.	Wtd.
Inexperienced	46.2	47.7	17.4	17.6	14.0	14.7
Experienced	41.1	41.9	28.7	28.7	15.1	14.7
Highly experienced	12.7	10.4	53.9	53.7	70.9	70.7

Table C.4 Unadjusted and Adjusted Trend Odds Ratios Based on 1999, 2000, and 2001 Data from the 649 Non-Incentive FI Regions

Substance Use Measure	2000 to 1999 Odds Ratios		2001 to 2000 Odds Ratios	
	Unadjusted	Adjusted	Unadjusted	Adjusted
Lifetime				
Marijuana	0.98	1.03	1.10[b]	1.17[b]
Cocaine	1.02	1.08	1.06	1.10[a]
Cigarettes	0.91[b]	0.93[a]	1.01	1.02
Alcohol	0.97	0.99	1.04	1.06
Hallucinogens	1.08[a]	1.15[b]	1.00	1.04
Past Year				
Marijuana	0.96	1.03	1.09[a]	1.14[b]
Cocaine	0.84[a]	0.91	1.18[a]	1.25[b]
Cigarettes	0.95	0.98	1.00	1.02
Alcohol	0.98	1.02	1.06	1.10[b]
Hallucinogens	1.05	1.13	1.32[b]	1.37[b]
Past Month				
Marijuana	1.03	1.12[a]	1.08	1.13[a]
Cocaine	0.69[a]	0.72[a]	1.22	1.27
Cigarettes	0.95	0.98	1.01	1.02
Alcohol	1.00	1.03	1.04	1.06[a]
Hallucinogens	1.04	1.19	1.23	1.30[a]
Dependence				
Illicit drugs	N/A	N/A	1.18	1.21
Alcohol	N/A	N/A	1.07	1.12
Marijuana	N/A	N/A	1.18	1.19

[a] Odds ratio is statistically significant at the .05 level when compared with an odds ratio of 1.00, which would indicate no change.

[b] Odds ratio is statistically significant at the .01 level when compared with an odds ratio of 1.00, which would indicate no change.

N/A = Not available due to a change in the definition of dependence.

Table C.5 Changes in Prevalence Measures, by Response Rate (Historic and Change) Groups

FI Regions, by Historic Response Rate	FI Regions, by Change in Response Rate	Change in Prevalence Measures			
		Average Relative Change (as Percent of Initial Year) across 12 Measures		Number (and Sign) of Statistically Significant Differences (Out of 12)	
		1999 to 2000	2000 to 2001	1999 to 2000	2000 to 2001
Low	Decrease	-3.19	19.79	0	3+
Low	Little change	-14.17	-4.98	4-	0
Low	Increase	11.17	11.00	3+	0
Midrange	Decrease	-3.99	12.70	0	2+
Midrange	Little change	4.56	17.44	1+	6+
Midrange	Increase	0.01	18.25	0	8+
High	Decrease	-2.30	20.78	1-	1+
High	Little change	-5.96	10.20	0	0
High	Increase	2.71	47.16	0	11+
All	All	-3.20	14.60	1-	12+

Table C.6 Percentage of Short Interviews, by Interviewer Experience

Questionnaire and Experience of Interviewer	Average Quarterly Percentage of Short Interviews		
	1999	2000	2001
Entire Questionnaire			
Inexperienced	7.14	7.50	6.75
Experienced	10.65	8.94	6.46
Core Sections Only			
Inexperienced	12.16	8.94	3.70
Experienced	16.08	11.46	4.59

Table C.7 Self-Reported Interviewer Behaviors: 1999-2001

Interviewer Assistance Behavior	1999		2000		2001	
	No.	%	No.	%	No.	%
Assisted the Respondent with the ACASI Portion of the Interview						
Yes	1,854	2.78	1,865	2.60	2,414	3.50
No	64,716	97.02	69,822	97.29	66,407	96.34
Not answered	136	0.20	77	0.11	108	0.16
Knew Respondent's Answers						
None of the time	59,606	89.36	64,433	89.78	63,578	92.24
A little to all of the time	6,922	10.38	7,254	10.11	5,241	7.60
Not answered	178	0.27	77	0.11	110	0.16
Total	66,706	100.00	71,764	100.00	68,929	100.00

Table C.8 Estimates of Change in Lifetime Use of Marijuana in Thousands of Users

	Retrospective Estimates		Difference in Annual Estimates	
Age Group	1999 to 2000	2000 to 2001	1999 to 2000	2000 to 2001
12 or Older	1,678	2,053	-106	6,951
12 to 17	-691	-391	-62	358
18 to 25	856	947	-70	1,480
26 to 34	-540	-709	-879	501
35 to 49	508	418	-1,048	2,418
50 or Older	1,544	1,788	1,953	2,194

Table C.9 Estimates of Change in Lifetime Use of Cocaine in Thousands of Users

	Retrospective Estimates		Difference in Annual Estimates	
Age Group	1999 to 2000	2000 to 2001	1999 to 2000	2000 to 2001
12 or Older	594	779	-509	2,892
12 to 17	-65	-10	-1	-17
18 to 25	287	372	-235	671
26 to 34	-439	-435	-1,016	216
35 to 49	240	404	-386	1,560
50 or Older	572	448	1,128	462

Table C.10 Comparison of Full Sample Trends with Trends Based on First 6 Months for Non-Incentive Regions Only: Numbers of Users Aged 18 to 25

Recency and Substance	Thousands of Users Aged 18 to 25			
	Full Sample (All 900 FI Regions and All Quarters)		First 6 Months (649 Non-Incentive FI Regions	
	2000	2001	2000	2001
Lifetime				
Marijuana	13,256[b]	14,736	13,304[b]	14,486
Cocaine	3,148[b]	3,820	3,291	3,584
Cigarettes	19,514[a]	20,354	19,356	20,007
Alcohol	24,352	25,063	24,706	25,188
Hallucinogens	5,592[b]	6,511	5,554[a]	6,386
Past Year				
Marijuana	6,860[b]	7,872	6,977[a]	7,623
Cocaine	1,274[b]	1,681	1,362	1,600
Cigarettes	13,283	13,808	13,289	13,650
Alcohol	21,580	22,233	21,958	22,197
Hallucinogens	1,959[b]	2,733	1,904[b]	2,849
Past Month				
Marijuana	3,950[b]	4,711	4,008	4,572
Cocaine	395[b]	566	400	540
Cigarettes	11,095	11,541	11,006	11,186
Alcohol	16,473[a]	17,333	16,467[b]	17,338
Hallucinogens	532[b]	803	519[a]	817
Past Year Dependence				
Illicit drugs	1,013[b]	1,397	1,025	1,201
Alcohol	1,337[b]	1,699	1,256[a]	1,587
Marijuana	736[b]	984	711	872

[a] Difference between estimate and 2001 estimate is statistically significant at the .05 level.
[b] Difference between estimate and 2001 estimate is statistically significant at the .01 level.

Table C.11 Percentages of Past Year and Past Month Users of Illicit Drugs with and without Additional Questions among Persons Aged 12 or Older: 2000 and 2001

Drug	2000		2001 (with Additional Questions)		2001 (without Additional Questions)	
	Past Year	Past Month	Past Year	Past Month	Past Year	Past Month
Any Illicit Drug[1]						
12 or older	11.0	6.3	12.6[b]	7.1[b]	12.6[b]	7.0[b]
12-17	18.6	9.7	20.8[b]	10.8[b]	20.8[b]	10.8[b]
18-25	27.9	15.9	31.9[b]	18.8[b]	31.8[b]	18.7[b]
26 or older	7.1	4.2	8.2[b]	4.5	8.1[b]	4.5
Hallucinogens						
12 or older	1.6	0.4	2.0[b]	0.6[b]	1.8[b]	0.5
12-17	3.9	1.2	4.0	1.2	3.9	1.0
18-25	6.8	1.8	9.3[b]	2.7[b]	8.3[b]	2.2[a]
26 or older	0.4	0.1	0.5[a]	0.1	0.4	0.1
Any Illicit Drug Other Than Marijuana[1]						
12 or older	5.8	2.6	7.0[b]	3.1[b]	6.9[b]	3.1[b]
12-17	11.3	4.6	12.0[a]	4.9	12.0	4.8
18-25	14.8	5.9	18.4[b]	7.8[b]	18.0[b]	7.6[b]
26 or older	3.6	1.7	4.4[b]	2.0	4.4[b]	2.0

***** Low precision; no estimate reported.

[a] Difference between this estimate for 2001 and the estimate for 2000 is statistically significant at the .05 level.
[b] Difference between this estimate for 2001 and the estimate for 2000 is statistically significant at the .01 level.

[1] Any Illicit Drug includes marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or any prescription-type psychotherapeutic used nonmedically. Any Illicit Drug Other Than Marijuana includes cocaine (including crack), heroin, hallucinogens, inhalants, or any prescription-type psychotherapeutic used nonmedically.

Source: SAMHSA, Office of Applied Studies, National Household Survey on Drug Abuse, 2000 and 2001.

Appendix D: Key Definitions, 1999-2001 Survey Years

This appendix is essentially a glossary providing definitions of use of illicit drugs, alcohol, and tobacco; mental health; demographic and geographic characteristics; and other terms used in this report. It also describes changes in definitions across the survey years that may have an impact on interpretation of trends. Each entry begins with the current definition of the term, followed by previous definitions that differ from the current definition. Cross-references are included for related terms. Also included is other information regarding interpretation of the data, including such topics as decision rules with regard to rounding.

The National Household Survey on Drug Abuse (NHSDA) was conducted in 1971, 1972, 1974, 1976, 1977, 1979, 1982, 1985, 1988, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, and 2001. The first survey (1971) is not directly comparable with the other surveys and is not generally included in trend analyses. Since 1972, however, there has been a great deal of consistency in the questions designed to develop estimates of the prevalence of drug use. Minor changes in question wording have been made throughout the survey series to ensure more complete and accurate responses, but these changes are not expected to affect comparability of survey responses. Questions also have been added to the NHSDA at different points in time to reflect changes in the drugs of abuse. For example, questions about the use of the form of cocaine known as "crack" were added in 1988. Questions about smokeless tobacco products and additional questions about cigarette use were added in 1985. Questions about Oxycontin and Rohypnol were added in 1999, and questions about the initiation and recency of use of Ecstasy (MDMA) were added in 2001.

The 1994 NHSDA fielded two questionnaires: NHSDA 1994-A (old), which replicated the data collection instruments and methodology used in 1985, 1988, 1990, 1991, 1992, and 1993; and NHSDA 1994-B (new), which was a revised questionnaire. The new revised questionnaire was designed to facilitate respondent cooperation, enhance the clarity of the questions, improve the accuracy of responses, and increase the reliability of measurements of drug use across survey years. The 1995, 1996, 1997, and 1998 NHSDAs fielded questionnaires that replicated the data collection instruments and methodology used in 1994-B. Data collection prior to 1999 used a paper-and-pencil interviewing (PAPI) methodology that also was used in a supplemental sample in 1999. The NHSDA PAPI instrumentation consisted of a questionnaire booklet completed by the interviewer and a set of individual answer sheets completed by the respondent. Although data from the new questionnaires used in 1994-B, 1995, 1996, 1997, 1998, and 1999 may be used for measuring trends from 1994 to 1999, these data cannot be compared with those presented in NHSDA Main Findings prior to 1994. Beginning in 1999, the NHSDA interview has been conducted by using a computer-assisted interviewing (CAI) methodology that employs a combination of computer-assisted personal interviewing (CAPI) conducted by the interviewer and audio computer-assisted self-interviewing (ACASI). Because of major differences between the CAI and PAPI methods, it is not appropriate to compare the 1999-2001 CAI estimates of substance use prevalence with earlier NHSDA estimates to assess changes over time.

Abuse

A respondent was defined with abuse of a substance if he or she meets one or more of the four criteria for abuse included in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) (American Psychiatric Association [APA], 1994) and does not meet the definition for dependence for that substance. An additional criterion for alcohol abuse is that the person must have used alcohol on 6 or more days in the past year; for abuse of marijuana, the person must have used marijuana on 6 or more days in the past year. These questions have been included in the NHSDA since 2000.

Adult Education SEE: "Education."

Age

Age of the respondent was defined as "age at time of interview."

Alcohol

Measures of use of alcohol in the respondent's lifetime, the past year, and the past month were developed from responses to the question about recency of use: "How long has it been since you last drank an alcoholic beverage?"

Feeder question: "The next questions are about alcoholic beverages, such as, [beer, wine, liquor, brandy, and mixed drinks]... Have you ever, even once, had a drink of an alcoholic beverage?"

SEE: "Current Use," "Prevalence," and "Recency of Use."

American Indian or Alaska Native

American Indian or Alaska Native only, not of Hispanic, Latino, or Spanish origin (including North American, Central American, or South American Indian); does not include respondents reporting more than one race. (Respondents reporting that they were American Indians or Alaska Natives and of Hispanic, Latino, or Spanish origin were classified as Hispanic.)

SEE: "Hispanic" and "Race/Ethnicity."

Any Illicit Drug

This includes marijuana or hashish, cocaine (including crack), inhalants, hallucinogens (including phencyclidine [PCP], lysergic acid diethylamide [LSD] and Ecstasy [MDMA]), heroin, or any prescription-type psychotherapeutic used nonmedically.

SEE: "Current Use," "Prevalence," and "Recency of Use."

Any Illicit Drug Other Than Marijuana

This includes cocaine (including crack), inhalants, hallucinogens (including phencyclidine [PCP], lysergic acid diethylamide [LSD], and Ecstasy [MDMA]), heroin, or any prescription-type psychotherapeutic used nonmedically, regardless of marijuana use.

SEE: "Current Use," "Prevalence," and "Recency of Use."

Any Use of Tobacco

This indicates use of any tobacco product: cigarettes, chewing tobacco, snuff, cigars, and pipe tobacco. Use of specialty cigarettes (i.e., bidis, clove cigarettes) is not included.

Asian

Asian only, not of Hispanic, Latino, or Spanish origin; does not include respondents reporting more than one race. (Respondents reporting that they were Asian and of Hispanic, Latino, or Spanish origin were classified as Hispanic.) Specific Asian groups that were asked about were Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, and "Other."

SEE: "Hispanic" and "Race/Ethnicity."

Binge Use of Alcohol

"Binge use of alcohol" was defined as drinking five or more drinks on the same occasion (i.e., within a few hours) on at least 1 day in the past 30 days.

Black

Black/African American only, not of Hispanic, Latino, or Spanish origin; does not include respondents reporting more than one race. (Respondents reporting that they were black or African American and of Hispanic, Latino, or Spanish origin were classified as Hispanic.)

SEE: "Hispanic" and "Race/Ethnicity."

Cigarettes

Measures of use of cigarettes in the respondent's lifetime, the past year, and the past month were developed from responses to the questions about cigarette use in the past 30 days and the recency of use (if not in the past 30 days): "Now think about the past 30 days – that is, from [DATEFILL] up to and including today. During the past 30 days, have you smoked part or all of a cigarette?" and "How long has it been since you last smoked part or all of a cigarette?"

Feeder question: "These questions are about tobacco products. This includes cigarettes, chewing tobacco, snuff, cigars, and pipe

tobacco. The first questions are about cigarettes only. Have you ever smoked part or all of a cigarette?

SEE: "Cigars," "Current Use," "Pipes," "Prevalence," "Recency of Use," and "Smokeless Tobacco."

Cigars

Measures of use of cigars (including cigarillos and little cigars) in the respondent's lifetime, the past year, and the past month were developed from responses to the questions about cigar use in the past 30 days and the recency of use (if not in the past 30 days): "Now think about the past 30 days – that is, from [DATEFILL] up to and including today. During the past 30 days, have you smoked part or all of any type of cigar?" and "How long has it been since you last smoked part or all of any type of cigar?"

Feeder question: "These next questions are about smoking cigars. By cigars we mean any kind, including big cigars, cigarillos, and even little cigars that look like cigarettes. Have you ever smoked part or all of any type of cigar?"

SEE: "Cigars," "Current Use," "Pipes," "Prevalence," "Recency of Use," and "Smokeless Tobacco."

Cocaine

Measures of use of cocaine in the respondent's lifetime, the past year, and the past month were developed from responses to the question about recency of use: "How long has it been since you last used any form of cocaine?"

Feeder question: "The questions are about cocaine, including all the different forms of cocaine such as powder, *crack*, free base, and coca paste. Have you ever, even once, used any form of cocaine?"

SEE: "Crack," "Current Use," "Prevalence," and "Recency of Use."

College Enrollment Status

Respondents aged 18 to 22 were classified as full-time undergraduate students or as some other status (including part-time students, students in other grades, or nonstudents). Respondents were classified as full-time students if they reported that they were attending (or will be attending) their first through fourth year of college or university and that they were a full-time student. Respondents whose current enrollment status was unknown were excluded from the analysis.

County Type

Counties were grouped based on the "Rural-Urban Continuum Codes" developed by the U.S. Department of Agriculture (1998). Each county is in either a Metropolitan Statistical Area (MSA) or outside of an MSA. Counties in new England were defined using New England County Metropolitan Areas (NECMA). Large metropolitan areas have a population of 1 million or more. Small metropolitan areas have a population fewer than 1 million. Nonmetropolitan areas are outside of MSAs and include urbanized counties with a population of 20,000 or more in urbanized areas, less urbanized counties with a population of at least 2,500 but fewer than 20,000 in urbanized areas, and completely rural counties with a population of fewer than 2,500 in urbanized areas.

Crack

Measures of use of crack cocaine in the respondent's lifetime, the past year, and the past month were developed from responses to the question about recency of use: "How long has it been since you last used *crack*?"

Feeder question: "These questions are about cocaine, including all the different forms of cocaine such as powder, *crack*, free base, and coca paste. Have you ever, even once, used any form cocaine?"

"The next questions are about *crack* in rock or chunk form, and not the other forms of cocaine. Have you ever, even once, used *crack*?"

SEE: "Cocaine," "Current Use," "Prevalence," and "Recency of Use."

Criminal Behavior

Adult respondents were asked a series of three questions: "During the past 12 months, how many times have you" . . . "stolen or tried to steal anything worth more than $50?" "sold illegal drugs?" and "attacked someone with the intent to seriously hurt them?" Adolescents aged 12 to 17 were asked the same three questions, as well as questions about three additional behaviors: . . ."gotten into a serious fight at school or work?" "took part in a fight where a group of your friends fought against another group?" and "carried a handgun?" For both adults and adolescents, responses to each question were dichotomized into a yes/no variable. Summary measures also were created to indicate an affirmative response to any of the above questions.

SEE: "Gang Fighting" and "Stealing."

Current Use

Any reported use of a specific drug in the past month.

SEE: "Prevalence" and "Recency of Use."

Dependence

A respondent was defined with dependence on a substance if he or she meets three out of seven dependence criteria (for substances with a withdrawal criterion) or three out of six criteria (for substances without a withdrawal criterion) for that substance, based on criteria included in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) (APA, 1994). An additional criterion for alcohol dependence since 2000 is that a person must have used alcohol on 6 or more days in the past year. An additional criterion for marijuana dependence since 2000 is that a person must have used marijuana on 6 or more days to be defined as dependent on marijuana. The questions used in 1999 were revised in 2000 to measure each DSM-IV criterion for each substance.

Driving Under the Influence

Respondents were asked whether in the past 12 months they had driven a vehicle while under the influence of alcohol and illegal drugs used together, alcohol only, or illegal drugs only.

Ecstasy

Measures of use of Ecstasy or MDMA (methylenedioxy-n-methylamphetamine) in the respondent's lifetime, the past year, and the past month were developed from responses to the question about recency of use: "How long has it been since you last used *Ecstasy*, also known as MDMA?"

SEE: "Current Use," "Hallucinogens," "LSD," "PCP," "Prevalence," and "Recency of Use."

Education

This is the measure of educational attainment among respondents who are 18 years old. It is based on respondents' reports of their highest level of education completed: less than high school; high school graduate; some college; and college graduate. Persons who completed postgraduate work are classified as college graduates.

Employment

Respondents were asked to report whether they worked in the week prior to the interview, and if not, whether they had a job despite not working in the past week. Respondents who worked in the past week or who reported having a job despite not working were asked whether they usually work 35 or more hours per week. Respondents who did not work in the past week but had a job were asked to look at a card that described why they did not work in the past week despite having a job. Respondents who did not have a job in the past week were asked to look at a

different card that described why they did not have a job in the past week.

Full-time "Full-time" in the tables includes respondents who usually work 35 or more hours per week and who worked in the past week or had a job despite not working in the past week.

Part-time "Part-time" in the tables includes respondents who usually do not work 35 or more hours per week and who worked in the past week or had a job despite not working in the past week.

Unemployed "Unemployed" in the tables refers to respondents who did not have a job, were on layoff, and were looking for work. For consistency with the Current Population Survey definition of unemployment, respondents who reported that they did not have a job but were looking for work needed to report making specific efforts to find work in the past 30 days.

Other "Other" includes all other responses, including being a student, someone who is keeping house or caring for children full time, retired, disabled, or other miscellaneous work statuses. Respondents who reported that they did not have a job, were on layoff, and were not looking for work were classified as not being in the labor force. Similarly, respondents who reported not having a job and looking for work also were classified as not being in the labor force if they did not report making specific efforts to find work in the past 30 days.

Ethnicity SEE: "Race/Ethnicity."

Ever Use SEE: "Lifetime Prevalence."

Exposure to Drug Education and Prevention

Adolescents were asked: "Please indicate if you have had any of these alcohol or drug education classes or experiences in school during the past 12 months . . .

Have you had a special class about drugs or alcohol?
Have you had films, lectures, discussions, or printed information about drugs or alcohol in one of your regular classes, such as health, physical education, etc.?
Have you had films, lectures, discussions, or printed information about drugs or alcohol outside of one of your regular classes, such as in special assemblies?"

(Youths who reported that they were home schooled in the past 12 months also were asked these questions. Youths who reported that they were home schooled were previously instructed to think about their home schooling as "school.")

Youths also were asked: "During the past 12 months, have you seen or heard any alcohol or drug prevention messages from sources outside school, such as in posters, pamphlets, and radio or TV ads?"

Family Income

Family income was ascertained by asking respondents: "Of these income groups, which category best represents (your/SAMPLE MEMBER's) total combined family income during [the previous calendar year]?... (Income data are important in analyzing the health information we collect. For example, the information helps us to learn whether persons in one income group use certain types of medical care services or have conditions more or less often than those in another group.)"

NOTE: For youths and those unable to respond to income questions, proxy responses were accepted.

Gang Fighting

Respondents were asked how many times during the past 12 months they had taken part in a fight where a group of their friends fought against another group. Response alternatives were (1) 0 times, (2) 1 or 2 times, (3) 3 to 5 times, (4) 6 to 9 times, or (5) 10 or more times.

SEE: "Criminal Behavior" and "Stealing."

Geographic Division

Data are presented for nine geographic divisions within the four geographic regions. Within the Northeast Region are the New England Division (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut) and the Middle Atlantic Division (New York, New Jersey, Pennsylvania). Within the Midwest Region are the East North Central Division (Wisconsin, Illinois, Michigan, Indiana, Ohio) and the West North Central Division (North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri). Within the South Region are the South Atlantic Division (West Virginia, Virginia, Maryland, Delaware, District of Columbia, North Carolina, South Carolina, Georgia, Florida), the East South Central Division (Mississippi, Tennessee, Kentucky, Alabama), and the West South Central Division (Texas, Oklahoma, Arkansas, Louisiana). Within the West Region are the Mountain Division (Idaho, Nevada, Arizona, New Mexico, Utah, Colorado,

Wyoming, Montana) and the Pacific Division (California, Oregon, Washington, Hawaii, Alaska).

SEE: "Region."

Hallucinogens

Measures of use of hallucinogens in the respondent's lifetime, the past year, and the past month were developed from responses to the question about recency of use: "How long has it been since you last used any hallucinogen?"

Feeder questions: "The next questions are about substances called hallucinogens. These drugs often cause people to see or experience things that are not real... Have you ever, even once, used LSD, also called *acid*? Have you ever, even once, used PCP, also called *angel dust* or phencyclidine? Have you ever, even once, used peyote? Have you ever, even once, used mescaline? Have you ever, even once, used psilocybin, found in mushrooms? Have you ever, even once, used *Ecstasy*, also known as MDMA? Have you ever, even once used any other hallucinogen besides the ones that have been listed?"

SEE: "Current Use," "Ecstasy," "LSD," "PCP," "Prevalence" and "Recency of Use."

Health Insurance Status

A series of questions were asked to identify whether respondents were currently covered by Medicare, Medicaid, the State Children's Health Insurance Program (SCHIP), military health care (such as TRICARE or CHAMPUS), private health insurance, or any kind of health insurance (if none of the above were reported). If respondents did not currently have health insurance coverage, questions were asked to determine the length of time they were without coverage, and the reasons for not being covered.

NOTE: For youths and those respondents who were unable to respond to the insurance questions, proxy responses were accepted.

Heavy Use of Alcohol

"Heavy use of alcohol" was defined as drinking five or more drinks on the same occasion (i.e., within a few hours) on 5 or more days in the past 30 days.

SEE: "Alcohol."

Heroin

Measures of use of heroin in the respondent's lifetime, the past year, and the past month were developed from responses to the

question about recency of use: "How long has it been since you last used heroin?"

Feeder question: "These next questions are about heroin. Have you ever, even once, used heroin?"

SEE: "Current Use, "Prevalence," and "Recency of Use."

Hispanic

"Hispanic" was defined as anyone of Hispanic, Latino, or Spanish origin. Specific Hispanic subgroups that were asked about were Mexican/Mexican American/Mexicano/Chicano; Puerto Rican; Central or South American; Cuban/Cuban American; and "Other." Respondents reporting that they were of Hispanic Latino, or Spanish origin and in racial groups such as American Indian/Alaska Native, black, more than one race, or white were classified as Hispanic.

SEE: "Asian," "American Indian or Alaska Native," "Black," "More Than One Race," "Race/Ethnicity," and "White."

Illicit Drugs

Illicit drugs include marijuana, cocaine, inhalants, hallucinogens (including LSD, PCP, or Ecstasy), heroin, or nonmedical use of psychotherapeutics, which include stimulants, sedatives, tranquilizers, and pain relievers. Illicit drug use has referred to use of any of these drugs.

SEE: "Current Use," "Prevalence," and "Recency of Use."

Income

SEE: "Family Income."

Incidence

Substance use incidence is the number of new users of a substance within a given year. Incidence estimates are based on questions about age of first use of substances, year and month of first use for recent initiates, the respondent's date of birth, and the interview date. Incidents of first use are classified by year of occurrence and age at the date of first use.

Inhalants

Measures of use of inhalants in the respondent's lifetime, the past year, and the past month were developed from responses to the question about recency of use: "How long has it been since you last used any inhalant for kicks or to get high?"

Feeder questions: "These next questions are about liquids, sprays, and gases that people sniff or inhale to get high or to make them feel good... Have you ever, even once, inhaled [INHALANT NAME] for kicks or to get high?" Respondents were asked about

the following inhalants: (a) amyl nitrite, "poppers," locker room odorizers, or "rush"; (b) correction fluid, degreaser, or cleaning fluid; (c) gasoline or lighter fluid; (d) glue, shoe polish, or toluene; (e) halothane, ether, or other anesthetics; (f) lacquer thinner or other paint solvents; (g) lighter gases, such as butane or propane; (h) nitrous oxide or whippets; (i) spray paints; (j) some other aerosol spray; and (k) any other inhalants besides the ones that have been listed.

SEE: "Current Use," "Prevalence," and "Recency of Use."

Low Precision

Prevalence estimates based on only a few respondents or with relatively large standard errors were not shown in the tables, but have been replaced with an asterisk (*) and noted as "low precision." These estimates have been omitted because one cannot place a high degree of confidence in their accuracy. In statistical terms, low precision estimates were those for which the natural log of the relative standard error (RSE) (i.e., the ratio of the standard error [SE] to the prevalence estimate) was .175 or greater.

LSD

Measures of use of lysergic acid diethylamide (LSD) in the respondent's lifetime, the past year, and the past month were developed from responses to the question about recency of use: "How long has it been since you last used LSD?"

SEE: "Current Use," "Ecstasy," "Hallucinogens," "PCP," "Prevalence," and "Recency of Use."

Marijuana

Measures of use of marijuana in the respondent's lifetime, the past year, and the past month were developed from responses to the question about recency of use: "How long has it been since you last used marijuana or hashish?"

Feeder question: "The next questions are about marijuana and hashish. Marijuana is also called pot or grass. Marijuana is usually smoked—either in cigarettes called joints, or in a pipe. It is sometimes cooked in food. Hashish is a form of marijuana that is also called *hash*. It is usually smoked in a pipe. Another form of hashish is hash oil. Have you ever, even once, used marijuana or hash?"

SEE: "Current Use," "Prevalence" and "Recency of Use."

Mental Health Treatment

For adults, mental health treatment is defined as treatment or counseling for any problem with emotions, nerves, or mental health in the 12 months prior to interview in any inpatient or outpatient setting, or the use of prescription medication for treatment of a mental or emotional condition. For youths aged 12 to 17, mental health treatment is defined as receiving treatment or counseling for problems with behaviors or emotions from specific mental health or other health professionals in school, home, outpatient or inpatient settings within the 12 months prior to interview. Treatment for only a substance abuse problem is not included for adults or youths.

Methamphetamine

Measures of use of methamphetamine (also known as crank, crystal, ice, or speed), Desoxyn, or Methedrine in the respondent's lifetime, the past year, and the past month were developed from responses to the question about recency of use: "How long has it been since you last used Methamphetamine, Desoxyn, or Methedrine?"

SEE: "Current Use," "Stimulants," "Prevalence," and "Recency of Use."

More Than One Race

Respondents were asked to report which racial group describes them and were allowed to report multiple groups. Persons reporting more than one race and that they were not of Hispanic, Latino, or Spanish origin were included in this category. This category does not include respondents who reported more than one Asian subgroup but who reported "Asian" as their only race. Respondents reporting more than one race and reporting that they were of Hispanic, Latino, or Spanish origin were classified as Hispanic.

SEE: "Hispanic" and "Race/Ethnicity."

Need for Illicit Drug Treatment

Respondents were classified as needing treatment for an illicit drug problem in the past 12 months if they met at least one of three criteria during the past year: (1) dependent on any illicit drug; (2) abuse of any illicit drug; or (3) received treatment for an illicit drug problem at a specialty facility (i.e., drug and alcohol rehabilitation facilities [inpatient or outpatient], hospitals [inpatient only], and mental health centers) in the past 12 months.

SEE: "Abuse," "Dependence," Specialty Treatment Facility," "Substance Abuse Treatment," and "Treatment Gap."

Needle Use

Needle use was derived from specific questions about use of cocaine, heroin, methamphetamine, other stimulants, or any other drug with a needle. Additional questions are asked about sharing needles, reusing needles, using bleach to clean needles before use, and where the needles were obtained.

Nonmedical Use of Any Psychotherapeutic

The section of the interview instrument deals with nonmedical use of four classes of psychotherapeutics: pain relievers, sedatives, stimulants, and tranquilizers.

Measures of use of nonmedical psychotherapeutic agents in the respondent's lifetime, the past year, and the past month were developed from responses to the question about recency of use: "How long has it been since you last used any prescription [pain reliever, sedative, stimulant, or tranquilizer] that was not prescribed for you or that you took only for the experience or feeling it caused?"

Feeder question: "Now we have some questions about drugs that people are supposed to take only if they have a prescription from a doctor. We are only interested in your use of a drug if: the drug was not prescribed for you, or if you took the drug only for the experience or feeling it caused."

NOTE: The pill card contains pictures and names of specific drugs within each psychotherapeutic category. For example, pictures and the names of Valium, Librium, and other tranquilizers are shown when the section on tranquilizers is introduced.

SEE: "Pain Relievers," "Pill Cards," "Psychotherapeutic Drugs," "Sedatives," "Stimulants," "Tranquilizers," "Current Use," "Prevalence," and "Recency of Use."

Northeast Region

The States included are those in the New England Division—Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont—and the Middle Atlantic Division—New Jersey, New York, Pennsylvania.

SEE: "Region" and "Geographic Division."

Pain Relievers

Measures of use of prescription pain relievers in the respondent's lifetime, the past year, and the past month were developed from responses to the question about recency of use: "How long has it been since you last used any prescription pain reliever that was

not prescribed for you, or that you took only for the experience or feeling it caused?"

Feeder question: "The questions in this section are about the use of pain relievers. We are not interested in your use of "over- the-counter" pain relievers such as aspirin, Tylenol, or Advil that can be bought in drug stores or grocery stores without a doctor's prescription. Card A shows pictures of some different types of pain relievers and lists the names of some others. These pictures show only pills, but we are interested in your use of any form of prescription pain relievers that were not prescribed for you or that you took only for the experience or feeling they caused."

The following prescription pain relievers were listed on Pill Card A (Pain Relievers): (1) Darvocet®, Darvon®, or Tylenol® with Codeine; (2) Percocet®, Percodan®, or Tylox®; (3) Vicodin®, Lortab®, or Lorcet®/Lorcet Plus®; (4) Codeine; (5) Demerol®; (6) Dilaudid®; (7) Fioricet®; (8) Fiorinal®; (9) Hydrocodone; (10) Methadone; (11) Morphine; (12) Oxycontin®; (13) Phenaphen® with Codeine; (14) Propoxyphene; (15) SK-65®; (16) Stadol® (no picture); (17) Talacen®; (18) Talwin®; (19) Talwin NX®; (20) Tramadol (no picture); and (21) Ultram®.

SEE: "Current Use," "Nonmedical Use of Any Psychotherapeutic," "Pill Cards," "Prevalence," "Psychotherapeutic Drugs," "Recency of Use," "Sedatives," "Stimulants," and "Tranquilizers."

PCP

Measures of use of phencyclidine (PCP) in the respondent's lifetime, the past year, and the past month were developed from responses to the question about recency of use: "How long has it been since you last used PCP?"

SEE: "Current Use," "Ecstasy," "Hallucinogens," "LSD," "Prevalence," and "Recency of Use."

Perceived Risk/ Harmfulness

Respondents were asked to assess the extent to which people risk harming themselves physically and in other ways when they use various illicit drugs, alcohol, and cigarettes, with various levels of frequency.

Percentages

The percentages in the tables are based on weighted data, and they are presented to one digit beyond the decimal point. In this report, all the 2001 tables contain percentages based on weighted data.

SEE: "Rounding."

Pill Cards

The pill cards contain pictures and names of specific drugs within each psychotherapeutic category. For example, pictures and the names of Valium, Librium, and other tranquilizers are shown when the questionnaire section on tranquilizers is introduced. Pill cards have been modified over the years to reflect changes in available psychotherapeutic drugs.

SEE: "Nonmedical Use Any Psychotherapeutic," "Pain Relievers," "Psychotherapeutic Drugs," "Sedatives," "Stimulants," "Tranquilizers," "Current Use," "Prevalence," and "Recency of Use."

Prevalence

General term used to describe the estimates for lifetime, past year, and past month use.

SEE: "Current Use" and "Recency of Use."

Psychotherapeutic Drugs

Psychotherapeutic drugs are generally prescription medications that also can be used illicitly to "get high" or for other effects. These include pain relievers, sedatives, stimulants, and tranquilizers.

SEE: "Nonmedical Use of Any Psychotherapeutic," "Pain Relievers," "Sedatives," "Stimulants," "Tranquilizers," "Pill Cards," "Current Use," "Prevalence," and "Recency of Use."

Race/Ethnicity

Race/ethnicity is used to refer to the respondent's self-classification as to racial and ethnic origin and identification. Categories included Hispanic, non-Hispanic groups where respondents indicated only one race (white, black, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, Asian), and non-Hispanic groups where respondents reported more than one race.

SEE: "American Indian or Alaska Native," "Asian," "Black," "Hispanic," "More Than One Race," and "White."

Recency of Use

The recency question for each drug was the source for the lifetime, past year, and past month prevalence rates.

The question was essentially the same for all classes of drugs. The question was: "How long has it been since you last used [drug name]?" For the four classes of psychotherapeutics, the

phrase "that was not prescribed for you or only for the experience or feeling it caused" was added after the name of the drug.

For tobacco products (cigarettes, snuff, chewing tobacco, or cigars), the response alternatives were (1) within the past 30 days; (2) more than 30 days ago but within the past 12 months; (3) more than 12 months ago but within the past 3 years; (4) more than 3 years ago. For the remaining drugs, the response alternatives were (1) within the past 30 days; (2) more than 30 days ago but within the past 12 months; and (3) more than 12 months ago.

SEE: "Prevalence" and "Current Use."

Region

There were four regions to consider: Northeast, Midwest, South, and West. These regions are based on classifications developed by the U.S. Bureau of the Census.

SEE: "Northeast Region," "Midwest Region," "South Region," and "West Region."

Rounding

The decision rules for the rounding of percentages were as follows. If the second number to the right of the decimal point was greater than or equal to 5, the first number to the right of the decimal point was rounded up to the next higher number. If the second number to the right of the decimal point was less than 5, the first number to the right of the decimal point remained the same. Thus, a prevalence rate of 16.55 percent would be rounded to 16.6 percent, while a rate of 16.44 percent would be rounded to 16.4 percent. Although the percentages in the 2001 tables generally total 100 percent, the use of rounding sometimes produces a total of slightly less than or more than 100 percent.

SEE: "Percentages."

Sedatives

Measures of use of sedatives in the respondent's lifetime, the past year, and the past month were developed from responses to the question about recency of use: "How long has it been since you last used any prescription sedative that was not prescribed for you, or that you took only for the experience or feeling it caused?"

Feeder question: "The questions in this section are about the use of sedatives and barbiturates. These drugs are also called *downers* or *sleeping pills*. People take these drugs to help them relax or to help them sleep. We are not interested in the use of

over-the-counter sedatives such as Sominex, Unisom, Nytol, or Benadryl that can be bought in drug stores or grocery stores without a doctor's prescription. Card D shows pictures of different kinds of prescription sedatives and lists the names of some others. These pictures show only pills, but we are interested in your use of any form of prescription sedatives that were not prescribed for you or that you took only for the experience or feeling they caused."

The following prescription sedatives were listed on Pill Card D (Sedatives): (1) Methaqualone (includes Sopor®, Quaalude®) (no picture); (2) Nembutal®, Pentobarbital (no picture), Seconal®, Secobarbital (no picture), or Butalbital (no picture); (3) Restoril® or Temazepam; (4) Amytal®; (5) Butisol®; (6) Chloral Hydrate (no picture); (7) Dalmane®; (8) Halcion®; (9) Phenobarbital; (10) Placidyl®; and (11) Tuinal®.

SEE: "Nonmedical Use of Any Psychotherapeutic," "Pain Relievers," "Pill Cards," "Psychotherapeutic Drugs," "Stimulants," "Tranquilizers," "Current Use," "Prevalence," and "Recency of Use."

Serious Mental Illness

Serious mental illness (SMI) is defined as having at some time during the past 12 months a diagnosable mental, behavioral, or emotional disorder that met the criteria for a DSM-IV (APA, 1994) disorder and that resulted in functional impairment that substantially interfered with or limited one or more major life activities. The questions that measured SMI in the 2001 NHSDA consisted of a short scale of six questions that asked respondents how often they experienced symptoms of psychological distress during the 1 month in the past 12 months when they were at their worst emotionally (see Section B.5 in Appendix B).

Significance

In tables in which trends are shown, the levels of significance for the changes between the two most recent survey years are noted as follows: .05 and .01. A significance level of .05 is used in comparing two rates in the text for demographic subgroups of the most recent survey sample.

Smokeless Tobacco Use

Measures of use of smokeless tobacco in the respondent's lifetime, the past year, and the past month were developed from responses to the questions about snuff and chewing tobacco use in the past 30 days and the recency of use (if not in the past 30 days): "Now think about the past 30 days—that is, from [DATEFILL] up to and including today. During the past 30 days,

have you used snuff, even once?" "How long has it been since you last used snuff?" "Now think about the past 30 days—that is, from [DATEFILL] up to and including today. During the past 30 days, have you used chewing tobacco, even once?" and "How long has it been since you last used chewing tobacco?"

Feeder questions: "These next questions are about your use of snuff, sometimes called dip... Have you ever used snuff, even once?" and "These next questions are only about chewing tobacco... Have you ever used chewing tobacco, even once?"

SEE: "Cigarettes," "Cigars," "Current Use," "Prevalence," and "Recency of Use."

South Region

The States included are those in the South Atlantic Division—Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia; the East South Central Division—Alabama, Kentucky, Mississippi, and Tennessee; and the West South Central Division—Arkansas, Louisiana, Texas, and Oklahoma.

SEE: "Region" and "Geographic Division"

Specialty Cigarettes

The section of the interview instrument deals with use of the following types of specialty cigarettes: (a) bidis (or "beedies"), which are small brown cigarettes from India consisting of tobacco wrapped in a leaf and tied with a thread; and (b) clove cigarettes, which are cigarettes containing tobacco and clove flavoring.

Specialty Treatment Facility

Defined as drug or alcohol rehabilitation facilities (inpatient or outpatient), hospitals (inpatient only), and mental health centers.

SEE: "Need for Illicit Drug Treatment," "Substance Abuse Treatment," and "Treatment Gap."

Stealing

Respondents were asked how many times during the past 12 months they had stolen or tried to steal anything worth more than $50. Response alternatives were (1) 0 times, (2) 1 or 2 times, (3) 3 to 5 times, (4) 6 to 9 times, or (5) 10 or more times.

SEE: "Criminal Behavior" and "Gang Fighting."

Stimulants

Measures of use of stimulants in the respondent's lifetime, the past year, and the past month were developed from responses to

the question about recency of use: "How long has it been since you last used any prescription stimulant that was not prescribed for you or that you took only for the experience or feeling it caused?"

Feeder question: "These next questions are about the use of drugs such as amphetamines that are known as stimulants, *uppers*, or *speed*. People sometimes take these drugs to lose weight, to stay awake, or for attention deficit disorders. We are not interested in the use of *over-the-counter* stimulants such as Dexatrim or No-Doz that can be bought in drug stores or grocery stores without a doctor's prescription. Card C shows pictures of some different kinds of prescription stimulants and lists the names of some others. These pictures show only pills, but we are interested in your use of any form of prescription stimulants that were not prescribed for you or that you took only for the experience or feeling it caused."

The following prescription stimulants were listed on Pill Card C (Stimulants): (1) Methamphetamine (crank, crystal, ice, or speed) (no picture), Desoxyn®, or Methedrine (no picture); (2) Amphetamines (no picture), Benzedrine®, Biphetamine®, Fastin®, or Phentermine; (3) Ritalin® or Methylphenidate; (4) Cylert®; (5) Dexedrine®; (6) Dextroamphetamine (no picture); (7) Didrex®; (8) Eskatrol®; (9) Ionamin®; (10); Mazanor®; (11) Obedrin-LA® (no picture); (12) Plegine®; (13) Preludin®; (14) Sanorex®; and (15) Tenuate®.

SEE: "Nonmedical Use of Any Psychotherapeutic," "Pill Cards," "Prevalence," "Recency of Use," "Pain Relievers," "Psychotherapeutic Drugs," "Sedatives," "Tranquilizers," and "Current Use."

Substance Abuse Treatment

Respondents were asked if they had received treatment for alcohol use, illicit drug use, or both alcohol and illicit drug use in the past 12 months in any of the following locations: a hospital overnight as an inpatient, a residential drug or alcohol rehabilitation facility where you stayed overnight, a drug or alcohol rehabilitation facility as an outpatient, an emergency room, a private doctor's office, prison or jail, a self-help group, or some other place.

Tobacco

SEE: "Cigarettes," "Cigars," and "Smokeless Tobacco Use."

Total Family Income

SEE: "Family Income."

Tranquilizers

Measures of use of tranquilizers in the respondent's lifetime, the past year, and the past month were developed from responses to the question about recency of use: "How long has it been since you last used any prescription tranquilizer that was not prescribed for you, or that you took only for the experience or feeling it caused?"

Feeder question: "These next questions ask about the use of tranquilizers. Tranquilizers are usually prescribed to relax people, to calm people down, to relieve anxiety, or to relax muscle spasms. Some people call tranquilizers *nerve pills*. Card B shows pictures of some different kinds of prescription tranquilizers. These pictures show only pills, but we are interested in your use of any form of prescription tranquilizers that were not prescribed for you, or that you took only for the experience or feeling they caused."

The following prescription tranquilizers were listed on Pill Card B (Tranquilizers): (1) Klonopin® or Clonazepam; (2) Xanax®, Alprazolam, Ativan®, or Lorazepam; (3) Valium® or Diazepam; (4) Atarax®; (5) BuSpar®; (6) Equanil®; (7) Flexeril®; (8) Librium®; (9) Limbitrol®; (10) Meprobamate; (11) Miltown®; (12) Rohypnol®; (13) Serax®; (14) Soma®; (15) Tranxene®; and (16) Vistaril®.

SEE: "Nonmedical Use of Any Psychotherapeutic," "Pill Cards," "Prevalence," "Psychotherapeutic Drugs," "Pain Relievers," "Sedatives, "Stimulants," "Recency of Use," and "Current Use."

Treatment Gap

The treatment gap is the difference between the number of people needing illicit drug treatment in the past 12 months and the number of people receiving treatment for an illicit drug problem at a specialty treatment facility in the past 12 months.

SEE: "Need for Illicit Drug Treatment," "Specialty Treatment Facility," and "Substance Abuse Treatment."

Unmet Need

Unmet treatment or counseling need is defined as a perceived need for mental health treatment that was not received in the past year.

SEE: "Mental Health Treatment"

Welfare Assistance

Household participation in one or more government assistance programs during the prior calendar year was defined as one or more family members receiving Supplemental Security Income (SSI), food stamps, cash, or noncash assistance. SSI provides payments to low-income, aged, blind, and disabled persons. Food stamps are government-issued coupons used to purchase food. Cash assistance refers to cash payments through Temporary Assistance for Needy Families (TANF), welfare, or other public assistance. Noncash assistance refers to services such as help getting a job, placement in an education or job training program, or help with transportation, child care, or housing.

NOTE: For youths and those respondents who were unable to respond to the insurance or income questions, proxy responses were accepted.

West

The States included are those in the Mountain Division—Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming; and the Pacific Division—Alaska, California, Hawaii, Oregon, and Washington.

SEE: "Region" and "Geographic Division"

White

White, not of Hispanic, Spanish, or Latino origin; does not include respondents reporting more than one race. (Respondents reporting that they were white and of Hispanic, Latino, or Spanish origin were classified as Hispanic.)

SEE: "Hispanic" and "Race/Ethnicity."